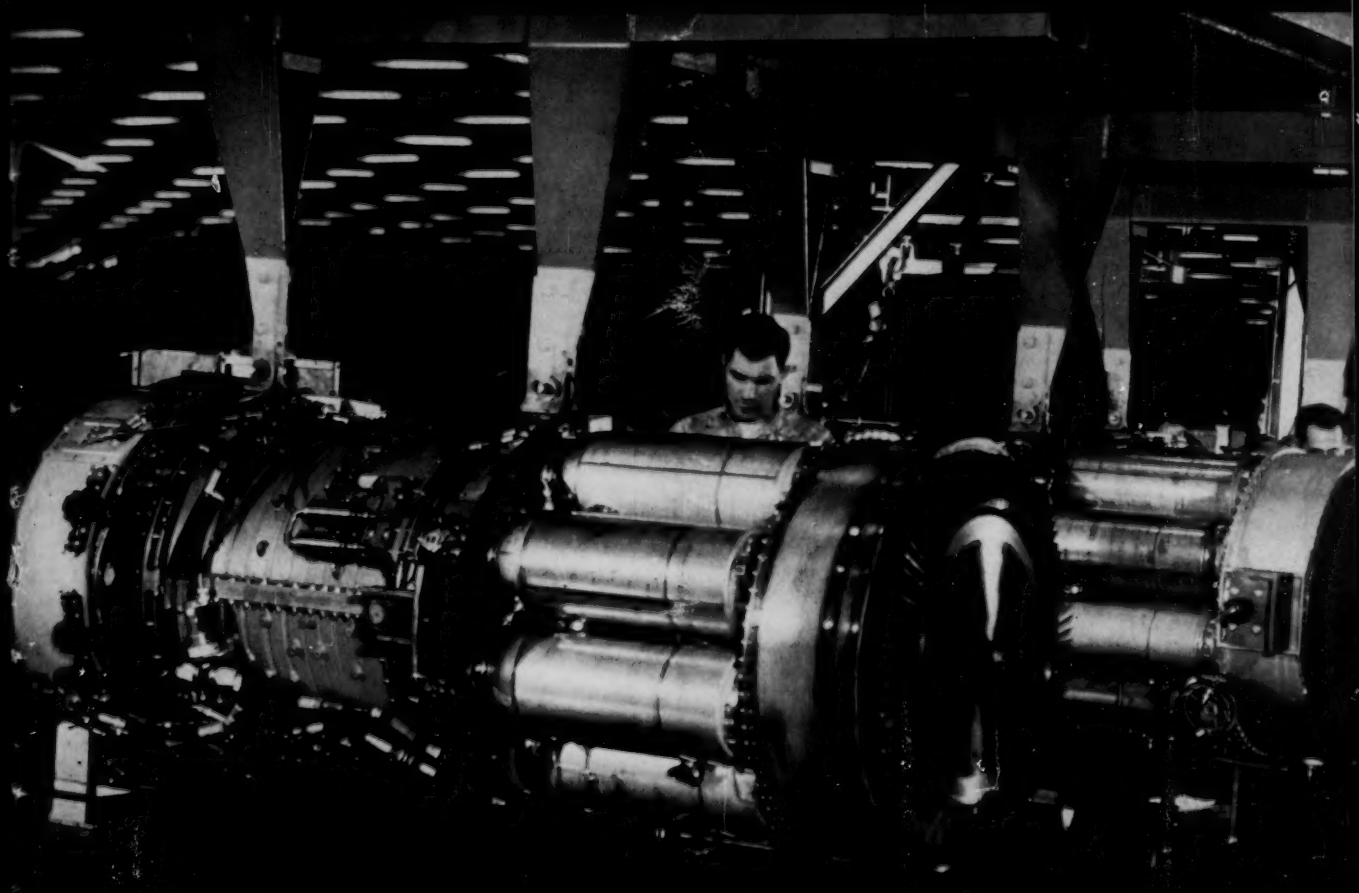
THE MAGAZINE OF

Standards



. . . up-to-date safety for modern conveyors — page 193

JULY 1958

THE MAGAZINE OF

Standards

Published monthly by the
AMERICAN STANDARDS ASSOCIATION
INCORPORATED
70 East Forty-fifth St., New York 17, N.Y.

VOL. 29 JULY, 1958 No. 7

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Our Cover

A pioneer in jet engine conveyors, this system was installed in 1953 at the General Electric Company's plant near Cincinnati to speed up production of J-47 jet engines for Air Force and Navy planes. Called a "grape arbor" because the engines hang from the overhead conveyor, this innovation permitted automatic movement from station to station, allowing the worker to concentrate on assembling the engine parts.

Safety recommendations for many new types of conveyors are included in the American Standard Safety Code for Conveyors (see page 193).

Single copy 60¢. $7.00 per year (foreign $8.00). Schools and libraries $5.00 (foreign $6.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 25, 1954, at the Post Office, New York, N. Y., under the Act of March 3, 1879.

Opinions expressed by authors in THE MAGAZINE OF STANDARDS *are not necessarily those of the American Standards Association.*

FEATURES

Up-to-Date Safety for Modern Conveyors. *By Jervis C. Webb* 193
New edition of American Standard Safety Code for Conveyors defines 71 different types of conveyors, recognizing new types and applying principles of safety to them.

How to Use Beta Ray Sources Safely. *By Dr Robert S. Rochlin* 196
More than 350 American firms using radioactive beta ray sources for industrial purposes now have a guide to safe use of these sources. Information is included in the new American Standard on how to obtain copies of Federal, state, and local regulations covering radiation safety and shipment of radioactive material.

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A Proposed Standard for Facilities for Scientific Conferences.
By Dr A. T. McPherson 202
Conferences should be held in more suitable environments for greater efficiency and success, the Associate Director of the National Bureau of Standards says. He suggests that American Standards could be developed for conference locations suited to the best use of conferees' time with less expense and better results for the money expended.

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Mark Your Calendar!

The Hotel Roosevelt, New York City, is the place, November 18-20 the date, for the National Conference on Standards this year. With an eye to the constant needs of industry, the Conference Program Committee is setting up sessions to give an opportunity to tell "How Standards Help Us."

R. C. Sogge, General Electric Company, is chairman of the committee, with Roy Trowbridge, General Motors Corporation, as vice-chairman. Other members are Virgil Graham, Electronic Industries Association; Leon Podolsky, also representing EIA; James Welshman, chairman of the Company Member Conference; Elmer Mattocks, American Petroleum Institute; and John Mulder, Eastman Kodak Company, representing the photographic industry.

Ten sessions are being arranged. The American Standards Association's Fortieth Annual Meeting opens the conference. The general sessions will start with standards at the very basis of production—their use in connection with materials. The American Society for Testing Materials is the sponsor. Other sessions will follow through with the way standards contribute to industry—in design and purchasing, their significance at the topmost level of management as they apply to the use of nuclear energy and in international relations, and producer-user benefits from standards. This will bring to the attention of industry the genuine benefits that standardization offers, for instance, in the field of textiles to the producer, the converter, the garment manufacturer, the retailer, and to the customer. Additional producer-user sessions are set for photography, electronics, and safety labelling standards on containers for petroleum and chemical products.

The Company Member Conference is sponsoring two sessions, one in cooperation with the National Association of Purchasing Agents; the other in cooperation with the National Machine Tool Builders Association.

Mark your calendar now — don't forget to be at the Hotel Roosevelt in November.

Watch for These in August —

An authority on nuclear energy tells what is happening on standards and gives his views on what is needed—an amazing development in mine safety is described—a Canadian asks whether simplified drafting is undermining ABC Unified standards.

This Month's Standards Personality

CHESTER L. DAWES, electrical engineer, teacher and author, is a staunch advocate of standards. He takes pride in the fact that he has had a leading part in providing up-to-date American Standard definitions of electrical terms, and that he has helped to bring American electrical definitions and international definitions into closer agreement, thus contributing to world understanding in electrical engineering.

Professor Dawes received his Bachelor of Science degree from the Massachusetts Institute of Technology in 1909, his Master of Arts degree from Harvard in 1942, and an Honorary degree of Doctor of Engineering from Northeastern University in 1945. Starting as assistant instructor at MIT in 1909, he became instructor in the Graduate School of Applied Science, Harvard University, in 1911. His service at Harvard was broken by a year on leave of absence during which he served as professor at the Post Graduate School of the U.S. Naval Academy in 1913-1914. As assistant professor and later associate professor of Electrical Engineering from 1919-1953, he won wide recognition and high standing in his profession.

Professor Dawes has contributed to engineering literature as author of four textbooks and of the Electrical Engineering Section of the authoritative *Mark's Handbook*. He also holds several patents on built-up high-heat mica plate and on electrical apparatus.

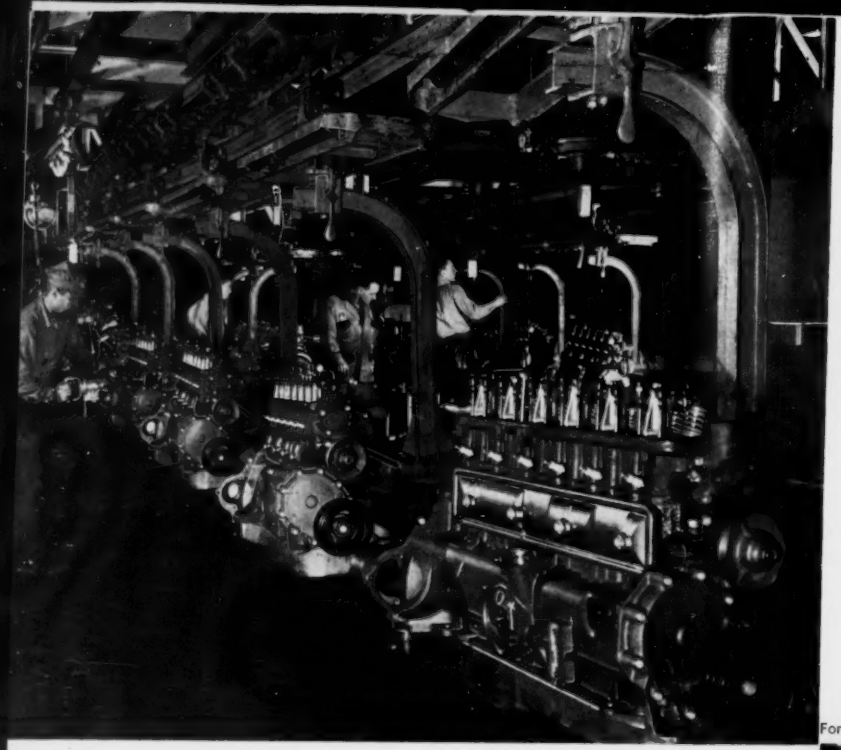
Professor Dawes retired from Harvard in 1953 and is now a consultant for several industries. These include the Simplex Wire and Cable Company, the Doble Engineering Company, and the New England Mica Company, of which he is vice-president and director.

Under his leadership as chairman of Sectional Committee C42, Definitions of Electrical Terms, the committee, its 72 members, and 18 subcommittees, has done a colossal job. After he became chairman of Committee C42, Professor Dawes worked for closer relations with the Institute of Radio Engineers. The result was a Coordinating Committee which succeeded in bringing the AIEE and the IRE standardizing committees into close cooperation with the C42 subcommittees.

Professor Dawes has also taken part in international work as chairman of the delegation to IEC Technical Committee 20 on Electric Cables and as a delegate to IEC Technical Committee 2 on Rotating Electrical Machinery at the Moscow meeting of IEC last summer. This experience has had an interesting side effect. In his contacts with the Russians, Professor Dawes has been successful in arranging for exchange of technical books and for an agreement whereby USSR will pay copyright fees for republication privileges.

Professor Dawes is a Fellow of the AIEE and of the American Association for the Advancement of Science, and a member of the American Academy of Arts and Sciences. He was a member of the AIEE Standards Committee for 13 years, three of them as a representative from Sectional Committee C42.

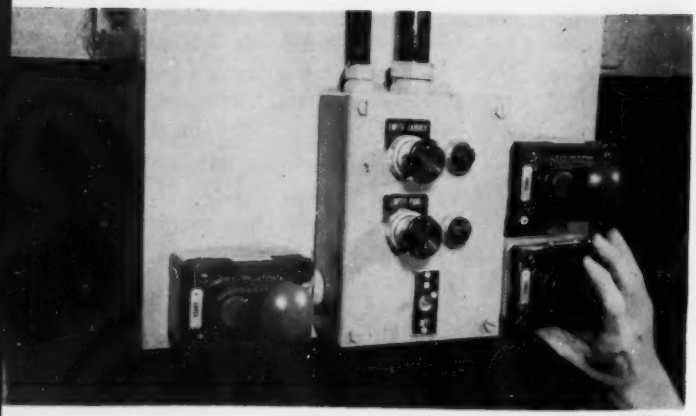
His hobbies are golf and boating. He keeps two boats at the Isle of Springs, Maine, and enjoys cruising along the Maine Coast.



Keeping Safety Standards abreast of constant changes in "A World of Automation" is the subject Mr Webb discusses in his timely article.

Ford Motor Company

FORD MOTOR COMPANY'S Cleveland engine plant uses modern conveyor system. Mechanical steel arms move six-cylinder valve engine throughout the plant, positioning it at every desired angle for assemblers.



Stewart Warner

"ELECTRIC BRAINS," all inter-related, direct the automated conveyor lines at Ford's Cleveland engine plant. "Brain" shown here receives information continuously from electric switches that act as lookouts in production department. "Brain" compiles data, makes decision as to action, then directs power to work giant steel arms.

PRECISELY sized pistons and connecting rods are fitted into cylinder bores on this assembly line in Chevrolet's V-8 engine plant, Flint, Michigan.

General Motors Photographic Section

From De Re Metallica by G. Agricola. Translated by Herbert Hoover and Lou Henry Hoover. Published by Dover Publications, Inc, New York 19, N.Y.

UP-TO-DATE SAFETY FOR MODERN CONVEYORS

by **Jervis C. Webb**

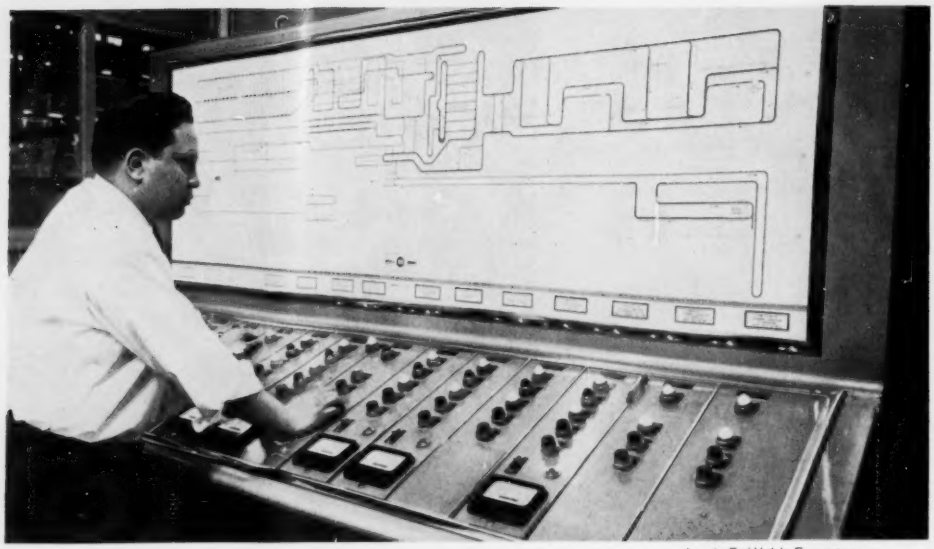
THE new edition of the American Standard Safety Code for Conveyors, Cableways, and Related Equipment, B20.1-1957, constitutes a landmark in analysis of safety problems in the machinery industry. For about seven years a special task force, supplemented by a very large and active group of manufacturers, underwriters, and users of equipment, has worked hard to complete the revision.

The first Code B20, which came out in 1947, was adequate for the time. Soon after its completion, however, advances in the conveyor field, both in type and complexity of units and systems, made it obvious to all concerned that considerable revision would be necessary. Perhaps one of the major projects undertaken by Sectional Committee B20 was to broaden the scope and intent of the code to cover the systems and equipment now being used.

The new code defines 71 different general types of conveyors as compared with 16 in the former edition, and takes into account the increasing use of conveyors in automated plants.

The committee found it was faced with a real problem in its attempt to include all the new types of conveyors in the standard. As a result, the revised edition contains a great deal of explanation as to what a conveyor is not as well as what it is. Industrial trucks, cranes, and monorails are not conveyors, the new edition declares. Neither is a tiering machine a conveyor in this edition, reversing the 1947 edition which listed a tiering machine as a conveyor and even included a schematic drawing of it.

A considerable aid in this particular task was obtained through the practically concurrent efforts of the chief engineers of the Conveyor Equipment Manufacturers Association who were endeavoring to arrive at standards and uniform terms and definitions for the conveyor art



Jervis B. Webb Company

COMPLEXITY, size, and interlocking of Ford-Cleveland engine plant's conveyor system make necessary this master panel where trouble can be spotted and eliminated at once, without searching through the entire system.

as it is today. This involved many, many hours of discussion and study. The result was the recently approved American Standard MH4.1-1958 (formerly American Standard B75.1-1956), Conveyor Terms and Definitions. In revising the 1947 edition of the Safety Code, Sectional Committee B20 kept close to this activity on terms and definitions. As a result, the new American Standard Code B20.1-1957 was enlarged to include every type of conveyor indicated in American Standard MH4.1-1958.[1] The general and specific safety provisions were edited to include the same terms and definitions of parts and components. This should provide the maximum of understanding between users, manufacturers, and others interested in safety as to the specific technical parts analyzed in any given safety problem.

The basic principles of good safety provisions were then applied to the new types of conveyors and components, and other related equipment, as had been the case in the old code. Particularly, in the specific problems for given equipment, more detail was provided for clarity and greater safety.

In a recent publication, the National Safety Council pointed out: "Mass production has been made possible largely by conveyor systems planned to fit manufacturing processes. Conveyors are used in assembly of articles, moving parts of materials from one machine operation to the next, moving parts through painting, drying, baking, heat treating, and other processes, and from one floor to another. Conveyors can operate under conditions where it would be dangerous or uncomfortable for men to work. They also eliminate many manual handling operations which present opportunities for injury."

In general, the standard defines a conveyor as "a horizontal, inclined, or vertical device for moving or transporting bulk materials, packages, objects, or passengers in a path predetermined by the design of the device, and having points of loading or discharge fixed or selective." Skip hoists and vertical reciprocating conveyors are included. Not included, however, in addition to industrial trucks, tractors, trailers, and tiering machines, are cranes, hoists, monorails, power and hand shovels, power scoops, bucket draglines, platform elevators designed to carry passengers or the elevator operator, moving stairways, and highway or rail vehicles.

In addition to the types of conveyors already listed for which safety requirements are specifically included in American Standard B20.1-1957, the standard also lists and defines conveyors to which general safety provisions apply but which are not mentioned specifically. Among these are apron conveyors, identified as booster, carrousel, car-type, en masse, gravity-discharge, and many others. The standard points out that even this list does not represent the entire range of conveyors, and refers any one interested to the list and definitions contained in American Standard Conveyor Terms and Definitions, MH4.1-1958.

Part 1 of the standard outlines general safety regulations that apply to every type or form of conveyor. This section calls for safety guards on all types of equipment

[1]American Standard B20.1-1957, Safety Code for Conveyors, Cableways, and Related Equipment, can be obtained from the American Standards Association at $1.00 per copy. American Standard Conveyor Terms and Definitions, MH4.1-1958, is available at $1.50 per copy.

where unguarded parts may be a hazard to operating personnel. It also recommends safety requirements that apply to design features of conveyors, such as belts and chains, pulleys, sprockets, and blocks, bearings, backstops and brakes, and overload protection. This same section offers recommendations for installation, for inspection and maintenance, for safety in connection with related structures, safe operating practices, and a special section on prime movers and controls.

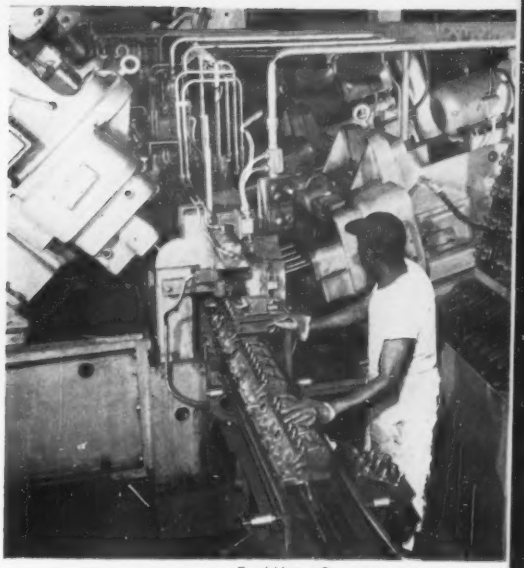
Part 2 provides special safety recommendations that apply particularly to specific classes of conveying equipment, such as aerial cableways, slat conveyors, belt conveyors, pneumatic conveyor systems, and aerial tramways, among others.

One change pertains specifically to conveyor systems of such complexity as that used in the Ford Cleveland Engine Plant. A provision is now included for spotting trouble immediately by means of a master panel and administering the necessary safety steps without searching through the entire system for the danger area.

Also, a new feature in this edition is a provision concerning a "traffic control system." This applies to aerial tramways and deals with safety devices such as bell signal codes, telephones, short circuits, and proper lighting.

The manufacturers of conveyors have been vitally interested in this new edition and are watching closely that their products will conform to its provisions. Even though publicity has been limited, many large users of conveyors and related equipment have circulated it amongst their safety groups and are making sure that their present systems, plus any future equipment they acquire, follow the suggestions of the Code. The National Safety Council asked the writer to speak on the Code and its details last October. The interest galvanized was considerable, and many organizations are now using the new Code.

The future, of course, is, as always, unpredictable. To prevent future obsolescence of the Code is of the utmost importance. Everyone concerned seems to feel that its scope is broad enough to cope with the movement of the conveyor field in the direction of automatics involving mechanical and electrical devices. It will also fulfill the need of users and manufacturers alike for an authority which will guide them in providing economical and practical systems in their plants—systems which will produce high quality products at reasonable costs and still maintain excellent safety records among their personnel.



Ford Motor Company

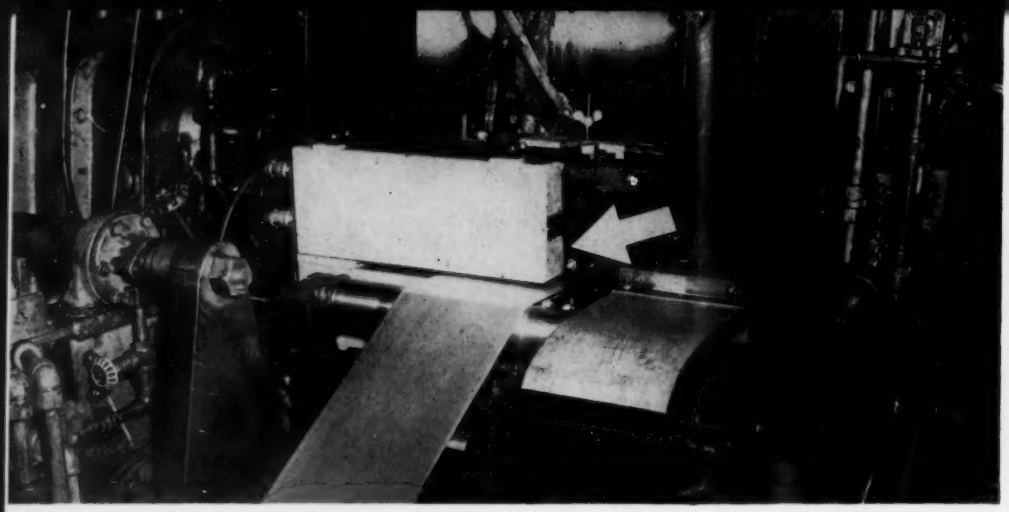
FORD V-8 engine blocks are turned on side by automation turn-over device before conveyor moves engine into transfer machine. This machine consists of 19 stations with 100 tools in operation. At one point, block is rotated and vibrated to remove chips.

It should be mentioned that the sponsorship of the work by the Accident Prevention Department of the Association of Casualty and Surety Companies and the American Society of Mechanical Engineers added great breadth to the group of people involved in the work.

Another fortunate coincidence was that, concurrently with the Code work, a considerable group of the committee were also involved in the recently published *Materials Handling Handbook*, co-sponsored by the Materials Handling Division of the American Society of Mechanical Engineers and the American Material Handling Society. The B20 Safety Code Committee was able to draw, therefore, from the conveyor and related equipment section of the *Handbook*, now published by Ronald Press Company. Such individuals as Herbert H. Hall, who was the prime mover in the *Handbook*, were able to provide considerable background.

ABOUT THE AUTHOR

Mr Webb is president and general manager of the Jervis B. Webb Company, Detroit, Michigan, and chairman of Sectional Committee B20, Safety Code for Conveyors and Related Equipment. The committee is sponsored by the Accident Prevention Department of the Association of Casualty and Surety Companies and The American Society of Mechanical Engineers.



MOST FREQUENT use of beta ray sources is for gages, such as this beta ray gage which continuously measures thickness of brass sheet without touching it.

Courtesy General Electric Co

Dr Rochlin, *General Electric Company, Schenectady, N. Y., is a member of Sectional Committee Z54 on Safety Code for Industrial Use of X-Rays and Radiation. He was chairman of the subcommittee that developed the new American Standard on beta ray sources.*

HOW TO USE BETA RAY SOURCES SAFELY

by **Dr Robert S. Rochlin**

IF you are using radioactive beta ray sources in your plant, a newly published American Standard can help you use them more safely. These sources are widely used industrially for non-contacting thickness and density gages, electrostatic charge elimination, self-luminous light sources, and in many other applications for improving quality and cutting costs.

American Standard Safe Design and Use of Industrial Beta Ray Sources, Z54.2-1958,[1] was approved January 6 by the American Standards Association. It has been published as National Bureau of Standards Handbook H66. It was prepared to aid the more than 350 American firms now using beta ray sources.

The new standard can promote safer use of these sources in several ways:

1. It can help you teach your personnel how to handle beta ray sources.
2. It can help you set up an adequate program for continuous protection of personnel, in accordance with Federal, state, and municipal regulations.
3. By outlining the factors involved in safer design and construction of beta ray sources, it can probably help you prepare improved purchasing specifications for new sources.
4. It tells you what to do in case of accidents or other emergencies in which radioactive sources are involved.

Prepared by a subcommittee of the American Standards Association's Z54 sectional committee, this safety standard contains a discussion of radiation exposure, beta ray measurement, the selection of preferred radioactive materials for beta ray sources, principles of source design, prototype testing, instruction manuals, leakage tests, warning labels, and manufacture, shipment, installation, storage, and disposal of sources. In addition, there is a section on safe working conditions in plants in which radioactive materials are used, and a section on how to deal with accidents involving radiation hazards.

One appendix tells how to obtain copies of the many Federal, state, and local regulations covering radiation safety and shipment of radioactive material. Another appendix summarizes the recently revised radiation exposure limits recommended by the National Committee on Radiation Protection and Measurements.

For sealed beta ray sources in normal use, protection is required against the beta radiation which may be emitted from an unshielded source and which may strike a person nearby. If the sealed container should develop a leak, however, and the radioactive material should leak out of the source, it would give rise to a second type of hazard, in which the radioactive material itself might be inhaled or ingested. In many cases the second type of potential hazard is much more serious and is harder to detect and control. The standard therefore goes into considerable detail regarding the design of sealed sources which are likely to stay leaktight over long periods of time. Attention is given to the effects of corrosion, mechanical damage, fire, and even damage

[1]Copies of the standard, Z54.2-1958, published as National Bureau of Standards Handbook H66, can be obtained from the American Standards Association at 20 cents each.

due to the source's own radiation. Recommendations for periodic leakage tests are also included.

According to estimates by the Atomic Energy Commission, American industry is saving over $400 million a year through the use of radioisotopes, and within the next five years this figure is expected to rise to an annual cost saving of about $5 billion. In addition, industrial use of x-ray machines continues to expand. As these sources of ionizing radiation spread to more and more industrial firms, it is essential that adequate precautions be taken to protect the users and the public against excessive exposure to radiation.

INTERNAL radioisotope-phosphor light source, not affected by power failures, makes this emergency marker luminous, especially valuable on trains, ships, and aircraft.

Photos, Courtesy United States Radium Corp

Sectional Committee Z54 of the American Standards Association was formed under the sponsorship of the National Bureau of Standards to formulate safety standards in this field. While basic standards for maximum permissible exposure to ionizing radiation are established by the National Committee on Radiation Protection and Measurements and by the International Commission on Radiological Protection, the safety codes prepared by the Z54 Committee are intended to apply these basic standards and other appropriate data to industrial radiation protection problems.

The Z54 committee has established nine subcommittees, covering protection against x-rays, radioactive sources, and radioactive contamination of industrial materials. In 1946 the committee formulated the American War Standard Safety Code for the Industrial Use of X-rays, Z54.1-1946, which is now being revised.

The subcommittee which prepared the beta ray source handbook includes representatives of source manufacturers, source users, insurance companies, and Federal and state agencies concerned with radiation protection. The subcommittee began its work in September, 1953, and submitted its final draft to the main Z54 committee in July, 1956.

Radioactive isotopes are inherently no more dangerous than high-voltage electricity, corrosive acids, rotating machinery, or any of the other potential hazards commonly found in industry. If proper precautions are taken, radioactive materials can be used safely. Because these precautions are as yet unfamiliar to most people, an educational program is needed for each new user. It is hoped that the new beta ray source handbook will help to fill this educational need.

PHOSPHOR CRYSTALS are excited by internal beta ray source to provide "atomic lamp" for railroad switch signals. Using no external power source, "lamp" provides maintenance-free service.

Avoid "Interchangeable Differences"

by **E. R. Friesth**

Mr Friesth, standards engineer, Materials Engineering Department, Deere & Company, Moline, Illinois, presented this paper at the Spring Meeting of the Company Member Conference, Detroit, Michigan, April 30.

THE human factor brings about one of our most difficult problems in promoting standardization. This human factor is what has often been termed "standards awareness," an appreciation of the values and benefits and methods of standardization. It must begin at the higher management levels. Then it quite naturally filters down throughout the organization.

Conversely, the standards effort must be expended on the working levels primarily and will progress up through the organization only as the awareness or appreciation of standardization has filtered down. People are inclined to form habits by instinct and they will resist change. At the same time they will work toward an end that will be appreciated. If a supervisor of a department appreciates the value of standardization, he can expect results along standardization lines from the men in that department. When we can communicate a clear concept and appreciation of the standardization picture, we are started down the road to progress because individual effort will have been stimulated.

In Deere & Company's organization we have a Standards Committee, composed of chief engineers and, in general, men from the higher management levels of the company. We look to this committee to establish the policies and provide the over-all guidance of our standardization program. Of even more importance, perhaps, is the fact that these men, on this level of management, are interested in standards and show their appreciation of the standards effort through attending committee meetings. As a result, we get throughout our organization a considerable amount of appreciation for the standards work. Men at all levels of our company structure will make suggestions concerning standards because they are aware that these suggestions will be appreciated.

You have heard and read about value analysis, brainstorming, operations research, work simplification, and the like. At the risk of over-simplifying, we can lump these techniques as group action methods of subjecting past or proposed actions to commonsense evaluation. In many cases the problems handled are of a standardization nature, either in establishing suitable economical quality or in establishing a pattern of action for future guidance, or as a corrective measure for past actions. As group action techniques, these can be valuable in fostering standardization awareness. However, they have their limitations in that individual effort is still of primary importance and the more normal but less spectacular means of communication must be emphasized to get the necessary response from the individual.

It is of major importance to maintain a high quality in the standards we produce and to make them accessible and easy to use.

One of our weaknesses in the modern science of standardization may lie in lack of simplification in our nomenclature. Starting with the definition often used by the American Standards Association that a standard is an "accepted solution to a recurring problem," we have all been guilty at one time or another, I suppose, of taking the "recurring problem" portion of that definition and with our particular problem at hand have prepared a "specialized" definition of a standard to fit our particular situation. As a result, with but a very little research, we are able to prepare quite an impressive list of definitions of standards. The weakness, of course, lies in the area of effective communication in the field of company standardization—while we are using one definition, the person with whom we are talking is thinking in terms of another definition.

Standardization has been characterized as the basis of mass production. As such, it has been used extensively in design, manufacturing, and purchasing. Standardization is also finding its place in the areas of personnel, administration, sales, packaging, storage and shipping, materials handling, and maintenance. As a matter of fact, the use of industrial standards is so well accepted that the average individual gives little thought to their actual importance. As industrial standards find their way into each of these areas, nomenclature is always one of the first aspects to be standardized, and for good reason since one of the primary functions of standards is to facilitate communication.

Standardization is the establishing of standards. It is

more than that. It is a movement toward a desirable degree of uniformity—desirable degree indicating something less than exact duplication. Too much standardization leads us down the road to a mediocre uniformity. Recognition of the essential differences is absolutely necessary for a progressive standardization atmosphere. Interchangeable differences are also a necessary part of life but probably on a decreasing scale and largely from an emotional standpoint only. Mass production, however, is based on a workable interchangeability of parts and practices and this area is what we think of in standardization.

For the purpose of this discussion, simplification and standardization can be differentiated by labeling simplification as the process of minimizing interchangeable differences, and standardization the process of avoiding interchangeable differences. Simplification in these terms, however necessary, becomes a preliminary process in standardization.

Thinking of simplification as the process of minimizing the interchangeable differences, we see it as a corrective measure. With it we weed out the interchangeable differences that have crept into the pattern of answers in the area of our "recurring problem" before our standard was developed. This is an important phase of standardization, but it is costly. We have already paid the fixed costs of interchangeable differences. Assuming we have four cast-iron parts in the line to do one job, we have already paid the quadruplicate design costs, pattern costs, scheduling costs, and methods costs. Simplification at this stage, in what we might call a post-standardizing process, cannot recover these costs.

We gain only in reduction of costs through increased production quantities of the one remaining part, reduced inventories of that part, and reduced distribution costs.

Although standards have been widely used, and effectively used, our standards have been developed in many cases through this type of haphazard accumulation of experience. We have gone through the process of minimizing the interchangeable differences after they have been designed into existence and after they have become problem areas.

As opposed to the post-standardization process just discussed, our modern science of standardization includes a pre-standardization type of process with which we set out to avoid the interchangeable differences. In other words, we intercept a new function, the new product, the new material, the new process, and set the standard first. We anticipate the recurring problem and predict the pattern of the forthcoming solutions to that recurring problem. We make that prediction on the basis of present technology and our past experience.

Two years ago our advertising department changed the packaging design on our folding cartons. Since it would be necessary to change all of the printing plates involved in these folding cartons and since the printing plate represented the larger portion of the cost of introducing a folding carton, we set ourselves to the task of simplifying our range of carton sizes. Based on our experience over the past years in selecting sizes of cartons, we knew approximately the size range that we would need to package our repair parts. With the use of the American Standard on preferred numbers, we set up a logical progression of carton sizes that would fit our packaging needs. Consequently we reduced by one-third the cost of changing our printing plates to the new design. In using that standard for the past two years we have found that in half a dozen cases we had not anticipated correctly our packaging requirements. However, by changing the carton standard to correct our mistakes in these instances, we have benefited considerably from a pre-standardization process.

STANDARDIZATION contributes to Deere's operations. Here is the beginning of a tractor assembly line.

As you might expect, the rewards and responsibilities increase as you enter this pre-standardization field. You proceed directly to the simplified, standardized position and avoid the fixed costs of bringing the interchangeable differences into the picture, and then removing them.

First of all, there is less evidence of tangible savings. You can only say that with this standard you avoided costly duplications, where before you could show comparative purchasing costs perhaps, or other comparative costs before and after the standard was adopted.

Secondly, in the case of a virgin standard of this type, it is even more important that a standards awareness be established in the minds of the users so that this standard is recognized, appreciated, and used.

Last, but not least, the slogan carried from time to time in THE MAGAZINE OF STANDARDS, "Standards are dynamic, not static," must be firmly fixed in your mind. Then when the pattern of solution to the recurring problem deviates from your predicted pattern, the standard can be revised quickly. In this way your standard consistently sets forth the best solution to the recurring problem.

At the last two annual sessions of CMC there have been presentations on the application of data processing in the field of company standardization. Undoubtedly the use of data processing equipment will represent one of the most important advances in promoting, first, simplification, and second, standardization. One of the major problems we encounter is the large amount of data that we must collect and analyze. The pace at which standards can be developed is limited largely by the amount of data that can be analyzed in preparing these standards. Because of this, it is virtually impossible to branch out into the many low volume areas to attempt simplification. The major emphasis must be placed on those areas where significant dollar savings can be achieved.

One of the significant features of this equipment is the ability to manipulate the data mechanically. Once the information is punched into the cards you can sort, print, re-sort, reprint—all at phenomenal rates that could not be approached without batteries of clerks and typists. Because of the machine accuracy and the ease of handling data, the catalogs produced will have a high factor of reliability. These catalogs will be as accurate as the information punched in the cards originally and they can be kept up to date by merely punching the new information into the card and reprinting the catalog by running the deck of cards through the accounting machine once more.

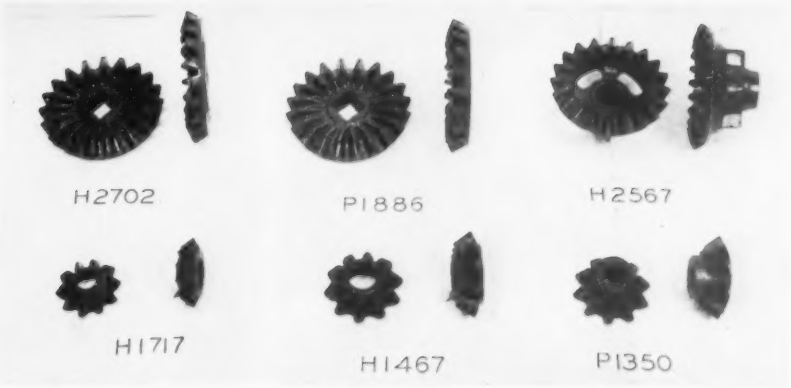
Deere & Company is now in the process of setting up a punch-card process for cataloging parts information. Our program is patterned after the one described by Mr King* of IBM two years ago. Mr King has been helpful to us in providing additional background information for setting up our program.

This is one area in which we expect a simplification procedure to aid our over-all company standards program. While our present parts standards cover common hardware largely, with a few categories of designed parts where the dollar volume has warranted a standard, we expect this cataloging process to reduce the introduction of new parts that are similar to parts already in line. In some of the categories, such as studs, hydraulic hose, sprockets, snap rings, etc, we fully expect standard patterns to be uncovered where we can obtain improved quality and cost reduction through standardization.

For example, the snap rings that we have in our line at the present time, I believe, represent every snap ring that ever was or ever will be. Certainly from listing these snap rings we have a good possibility of setting up a progression of sizes and qualities which will enable our designers to use snap rings more effectively in their design.

*"Standardization By Punch-Card Methods." A. H. King, Standards Engineering Department, IBM Corp, Poughkeepsie, N. Y., presented at CMC meeting, Cleveland, Ohio, May 15, 1956 (see MAG OF STDS, July, 1956, p 208).

HUNDREDS of thousands of repair parts that go into farm machinery are stocked and orders filled from Deere's stockrooms. A punch-card process of cataloging parts is now being developed to simplify stockroom records.



DEERE finds that families of parts such as these are uncovered and cataloged when data processing equipment is used. New data processing methods being introduced by Deere are expected to cut down introduction of parts that duplicate those already on hand.

Many excellent standards have been developed and issued in the past year. The American Standards for drafting which were reported on at the last Company Member Conference have since been issued. These drafting standards will undoubtedly have a far-reaching effect in simplification of that area of communication which is covered by our blue prints. Recently in our company it has been necessary, in transferring a rather large group of blue prints from one factory to another, to have those responsible in the two factories sit down together and translate the blue prints from one factory's drafting practice into the drafting practice that was being used by the second factory. While this was a major problem for the two factories concerned, it is rather a minor problem compared to some that have come up with drafting practice, and the many drawing exchanges that have taken place between our government agencies and various industrial suppliers of defense material.

Within these drafting standards the coverage of true positional tolerances represents to a large extent an example of pre-standardization. Introducing a standard on this subject at this time, when there are but a relatively few companies using this technique of tolerancing, the standard will promote the use of true dimensional tolerancing. At the same time, these companies will not have to make numerous revisions to get in line with the practice of other companies. Their drawings, if the American Standard is followed, would be readily understandable to other companies even if they are produced halfway across the continent.

Over the past few years we have heard a good deal about simplified drafting. While the American Standards did not pick up some of the ideas promoted with the simplified drafting practice proposals, it is undoubtedly true that the ideas promoted through simplified drafting techniques have had their effect on the American Standard. It is also true that the publicity on simplified drafting has created a considerable amount of awareness of drafting standards. Whatever your position may be on simplified drafting practices, I believe that you will agree that here is a controversial issue which has certainly had its effect on drafting practices throughout the country. These ideas have been kicked around by people in standardization circles, industrial circles, and educational circles. The net effect undoubtedly has been to remove some of the artistry from drafting rooms where a considerable amount of time had been spent in preparing beautiful blue prints. Because of the awareness created by the publicity on simplified drafting practices, numerous company drafting standards now recognize the possibility of streamlining drafting techniques. Undoubtedly, also, that publicity on simplified drafting practices and the awareness that resulted has improved the area of communication covered by our blue prints.

In summary, then, we need more research on the human factor in standardization. Research will bring about that standards awareness which can permeate down through our organizations. As a result, personnel in all levels of the organization will have an appreciation of standards and will be motivated to expend the necessary standards effort.

We need also to be aware of the lack of simplified nomenclature in the standardization field. We must recognize that for the word "standard" there are 23 dictionary definitions and dozens of other specialized definitions that the other fellow may have in mind. We must throw in the additional adjectives necessary to explain the particular standard we have in mind so that we can converse on common ground with personnel in all the areas of industry where standards are being promoted.

We must be aware of the complexities of communications and make our standards clear, concise, and accessible.

We can benefit from post-standardization—simplifying the results of past actions—minimizing the interchangeable differences. We can look for even greater benefits from pre-standardization—predicting the patterns of future action with a dynamic standard and avoiding the interchangeable differences.

Photo by Gene Dauber

A PROPOSED STANDARD FOR FACILITIES FOR SCIENTIFIC CONFERENCES

by **A. T. McPherson**

Dr McPherson is associate director of the National Bureau of Standards, Washington, D.C. (See "This Month's Standards Personality," May, 1958, page 127.) He has had a great deal of experience with scientific conferences in all parts of the world. The proposal discussed in this article raises an interesting question on which Dr McPherson would greatly appreciate your comments.[1]

THE location and physical facilities provided for scientific conferences have much to do with their efficiency and over-all success. Conferences are expensive in terms of direct costs for salaries, travel, and space for assembly. They are even more expensive in terms of the time and energy of scientists in scarce categories.

At present most conferences are held in hotels in large cities. It is no reflection on the hotels to say that the general purpose facilities provided primarily for the lodging and entertainment of the traveling public are poorly adapted to the specialized needs of scientific conferences. Some conferences are held out of season in resort hotels or clubs, or on college campuses during the summer vacation. These are much better adapted to the needs of scientific conferences, but often they still do not provide the optimum facilities; furthermore, they are available only at certain times of the year, which may not be the most suitable for holding the conferences. The need for conference facilities—like any other specialized need—can best be met by specific, purposeful design and construction.

This paper presents the general outline and rationale of a standard for such facilities. Before they reach the stage of a valid standard, the ideas that are here presented must be amplified, and specific requirements must be developed in cooperation with interested groups of scientists. It is clear, however, from even casual consideration of the present situation that even

[1] Comments can either be sent to the Editorial Department of the MAGAZINE OF STANDARDS, or directly to Dr McPherson in Washington, D. C.

a limited standard can bring about a marked improvement in the efficiency of conferences, and they may also effect a reduction in costs. But before presenting the general requirement of a standard, we must first define the conferences that we are considering.

Definition of a Conference

A conference, for the purpose of the present discussion, is an assembly of scientists that has been called for the interchange of ideas and information on a specific subject either with or without the object of reaching a consensus or developing specific recommendations or resolutions. A conference, then, is a particular kind of a meeting. It must be limited in size to a group that can interact and establish a successful network of communications. This number will vary with the subject of the conference and the degree of acquaintance of the conferees. Arbitrarily the maximum number for a conference might be put at from 100 to 300.

The usual pattern of successful conferences is to hold a limited number of assemblies of the entire group in order to present the theme and subjects for discussion and to provide for sub-assemblies in small discussion groups or committees. These smaller groups usually report back to the conference as a whole.

Most scientific meetings, as distinguished from conferences, serve primarily for one-way communication—they bring scientists together to hear what a speaker or a group of speakers have to present. Audience participation is usually limited to a few questions designed to amplify and clarify the speaker's presentation. A meeting, therefore, can be of any size and attendance and need be limited only by the number accommodated by the hall.

General Requirements

This basic difference between a conference and a meeting means that the setting and appointments for a real conference are much more critical than those for a meeting, because it is necessary to provide facilities that will foster the maximum degree of communication and interchange of ideas among the participants. Some of the more important requirements for a successful conference are as follows:

1. The conferees should be isolated from other persons or groups and preferably should live under one roof for the duration of the conference. It should be possible to maintain security if desired.

2. The location should be removed from distracting influences and should be conducive to relaxation and deliberation.

3. Assembly spaces should be provided both for the conference as a whole and for the conferees assembling in small groups. In addition there should be adequate comfortable lounge space for informal conversations.

4. The conference rooms should be commodious, well equipped, and designed for good acoustics. The lighting should be easily controlled. Air conditioning should be provided if warranted by the climate. Seats should be comfortable and spaced so as to permit anyone to enter or leave a room without disturbing others. Equipment should include the following items:

Blackboards with separately controlled lighting;
Complete projection facilities in the larger rooms, and slide projectors in the smaller rooms;
Sound-recording and play-back facilities; and
Facilities for simultaneous translation.

5. There should be a conveniently located secretarial office equipped for registration, clerical services, and the quick duplication of conference documents.

6. Living accommodations should be provided at a range of prices and should include simple and inexpensive dormitory space for graduate students and other junior personnel.

7. Recreational facilities should be provided in keeping with the resources of the particular location.

8. The location should be reasonably accessible to one or more scientific centers. It should be provided with adequate public transportation and should be convenient to main highways.

Comments on Requirements

A highly satisfactory national plan for conference facilities meeting the requirements of location and isolation would be to establish a chain of conference centers in various types of recreational areas across the country, placing one or more, say, on each coast, in the mountains, in the forests, and on the desert. Thus, all the scientists of the country would have convenient access to them for local or regional conferences.

If the buildings were constructed on land specially leased for the purpose in national or state parks, a large element of expense would be eliminated.

The building construction would follow a pattern characteristic of each location. With ample land available, the usual motel pattern would probably afford the most practical type of construction and would need to be modified only by adding all-weather communicating passages and assembly rooms.

The inclusion of inexpensive dormitory facilities would enable graduate students and junior scientists to attend conferences from which they would otherwise be excluded by cost. Such facilities would also benefit government and university scientists who often attend conferences at personal expense.

Advanced scheduling, both as to date and probable number in attendance, would enable the conference facilities to be used fully and would thereby reduce the cost of operation below that of a hotel or club.

Sponsorship and Development of the Standard

The proposed standard could be developed under ASA procedure by the sectional committee method. The sponsor should be an organization broadly representative of the scientists, mathematicians, and engineers of the nation. It might be either a government, a quasi-government, or a nongovernment organization. Among government organizations the National Science Foundation would be a logical choice on the basis of its general mission. The Department of Defense would be another possibility, because the military agencies

have a large and growing concern with scientific conferences, and they often wish to isolate the conferees for security reasons.

Two quasi-governmental agencies might also be considered — the Smithsonian Institute and the National Research Council. As a matter of fact, the need for better physical facilities for conferences has been discussed from time to time in the NRC Conference on Electrical Insulation.

Among nongovernmental organizations the American Association for the Advancement of Science has already had experience in the field through its promotion of the very successful Gordon Research Conferences during the vacation period at Colby College. A number of other scientific and technical societies might be interested. The American Society for Testing Materials and the American Chemical Society are two strong, diversified organizations which would be interested because of the extensive use that they might make of the facilities.

In the development of the standard, the sectional committee should include strong representation from organizations of hotel and motel managers since they would be concerned with the operation of the facilities. In view of the plan to locate the conference centers in scenic or recreational areas, officials of the various national and state park and forest services should also be brought into the committee.

IN MOSCOW, THE GUM department store at left; St. Basil's Cathedral, right background.

Photo by S. David Hoffman

The USSR Reports on Standards

Scientific and Technical Cooperation of Socialist Countries in the Field of Standardization is the title of a leading article published early this year in the USSR magazine Standartizatsia. *A translation of excerpts from this article will be of interest to readers of* THE MAGAZINE OF STANDARDS *as indicating the trend of standardization in communist countries. The article says:*

"It was decided at the Conference of Standardizing Organizations of Socialist Countries, held in May 1956 at Moscow, to widen and strengthen in every possible way direct contact and cooperation in the field of standardization between the socialist countries. To achieve this the Conference decided to establish an exchange of experience acquired by each socialist country both in administrative and technical fields, to exchange their annual working programs, their national standards, instructions, data, and all pertinent documentation related to standardization, and to circulate among themselves the results derived from any scientific research and any authoritative opinion related to the most important problems of standardization. . . . It also was decided to enlarge and activate participation in the work of the International Organi-

Editor's Note: The term "socialist countries" is used in the *Standartizatsia* article to mean the communist countries allied with the USSR.

zation for Standardization and in other international organizations.

"Since that conference, scientific and technical cooperation between the standardizing organizations of socialist countries has markedly expanded.

"In November 1957 a second conference of the standardizing bodies of the following countries took place: Albania, Bulgaria, Chinese People's Republic, Korean People's Democratic Republic, Czechoslovakia, East Germany, Hungary, Mongolian People's Republic, Poland, Roumania, USSR. This conference has examined draft recommendations for the unification of national standards assuring interchangeability in the field of machine construction and of the basic standards in the field of 'black metallurgy'."

Reports presented to that conference indicated that during 1956-1957 substantial standardizing work was achieved in those "socialist" countries where no standardization on a governmental level had previously existed. The article says:

"There are now in the Korean People's Democratic Republic about 300 active state standards and in the Mongolian People's Republic over 100 such standards."

The leader of the Red China delegation reported that standardization in his country is constantly growing and that in their work they widely use USSR standards as well as standards of other socialist countries, adapting them to the specific industrial conditions of the Chinese People's Republic.

The representative of Albania pointed out that the Moscow Conference of 1956 greatly helped the Albanian engineers who, "using the experience of socialist sister-countries were able to improve their own standardizing work and that at the present moment Albania has established about 700 standards."

The Roumanian People's Republic reported that "during this period 571 new standards were established and 370 revised. Altogether, this country has about 5500 state standards."

In several countries, such as Bulgaria, Poland, and Czechoslovakia, where previously standards were studied and prepared mostly "by individual specialists" now different scientific research institutions of the respective countries as well as the most progressive industrial plants, participate in the preparation of their national standards. This method of producing standards has been practiced by USSR for many years and, incidentally, "during the period between those two conferences 1062 state standards (GOSTS) have been approved in the Soviet Union."

"The aim of unification of standards," says the article, "is to guarantee the interchangeability of products (machinery, raw materials, and semi-finished products) which are bartered by the socialist countries. The objects of unification are the principal characteristics defining the interchangeability of products, dimensional and qualitative data, as well as test methods established for checking these characteristics. It is understood that secondary characteristics which do not influence interchangeability, and other data and requirements necessary for full definition of a product, are established in national standards in conformity with local manufacturing conditions."

In order to carry on orderly unification of national standards in conformity with the decisions adopted by the conference, the following procedural steps have been suggested:

1. Study of proposals for unification of national standards should be carried on by the national organizations of socialist countries.

2. A complete standard or part of a standard, or of a group of standards, may be included in the text of a recommendation for unification.

3. As the basis of unification, one of the standards, or a group of standards, of some country should be taken, as well as the progressive characteristics of standards from other socialist countries. ISO recommendations or those of other international organizations, should also be considered.

4. The process of studying proposals for unification should pass through the following steps:

(*a*) Preparation of the first draft recommendation based on existing materials.

(*b*) Circulation of the first draft recommendation to all standardizing bodies of socialist countries for their comments and suggestions.

(*c*) Preparation of the second draft proposal based on comments received. If necessary for preparation of the second draft proposal, consultative meetings of specialists representing interested socialist countries should be called.

(*d*) Examination of all proposals and acceptance of recommendations for unification by the annual conference of standardizing bodies of socialist countries.

5. National standardizing bodies should include in their national standards the recommendations accepted by the above conference to the extent and within the period determined by each country in conformity with the status of its own industry. They notify accordingly all socialist countries.

The above procedure does not preclude the possibility that an individual country might make a proposal on the subject of unification, the acceptance or rejection of which might be decided by letter ballot of all socialist countries.

During the period between the two conferences, noticeable results were achieved with regard to unification of standards on interchangeability in the field of machine construction and metals. The article reports:

"In the preparation of these proposals specialists of the German Democratic Republic (East Germany), Hungary, Poland, Czechoslovakia, and Soviet Union took part. The resulting proposals were circulated as a preliminary step to all national standards organizations of the socialist countries, and during the conference were examined by the working committees composed of prominent specialists of respective countries. Altogether, there were ten such committees working during the conference. They covered such subjects as quality marks of steel, technical requirements and grading of rolled steel shapes, cast iron and ferro-alloys, screw threads, fits and tolerances, machine part drawings, etc."

All the proposals presented by the committees of specialists were examined at the plenary meeting and, after appropriate modification, were accepted for inclusion in national standards of the socialist countries.

In respect to technical drawings, a unified system was elaborated concerning standard scales, letter symbols, projections, cross sections, dimensioning, etc. The article

gives the following report on drawings:

"This common technical language used in drawings will make it possible to avoid the necessity of redrawing in each individual country because the adoption of a unified practice of presenting technical drawings will make them easily understandable in all other socialist countries, thus saving both labor and time."

The conference tentatively suggested 63 different questions in the field of metallurgy and machine constructions which should be studied during the year 1958. All these subjects are assigned to various national standardizing bodies of the socialist countries, with the Soviet Union being assigned the larger number.

"Scientific and technical cooperation of socialist countries in the sphere of standardization," says the article in conclusion, "will also greatly help the International Organization for Standardization (ISO) of which most of the socialist countries are members. When working on unified standards the socialist countries always take into account existing ISO Recommendations, or those still in preparation. Therefore, these recommendations will penetrate the standardization practice not of separate countries but simultaneously of a group of countries which undoubtedly will greatly enhance the importance of ISO Recommendations. This is what actually happened when the question of test methods of metal for tension and hardness, diameters and pitches of screw threads, and bolt sizes were discussed. The fact that socialist countries in their work on a number of questions are going ahead in comparison with the work done by certain ISO technical committees will help to hasten the work on a wide international scale. The constantly growing activity of socialist countries, members of ISO, in the work of technical committees of that organization should be pointed out as a positive factor of international cooperation.

"The second conference on standardization of socialist countries passed in an atmosphere of full mutual understanding, unity, and cooperation. The strictly business character of the technical discussions and the right solutions found during its session will greatly contribute to heightening the general technical level of the industry in the socialist countries and to solidification of economic bonds between them."

NEW BOOKS . . .

IDENTIFICATION OF MEDICAL GAS CYLINDERS. ISO Recommendation R 32. January 1957. First edition. International Organization for Standardization, 1 rue de Varembé, Geneva, Switzerland. (Copies available from the American Standards Association, 70 East 45 Street, New York 17, N. Y.) $1.50. Provides an international system of colors to identify cylinders containing medical gases, fitted with valves of the flush type. Each cylinder should bear a color corresponding to the gas it contains and should also be marked with the name of the gas, according to the Recommendation. It is recommended that in addition the cylinder be legibly marked with the chemical formula of the gas, except in the case of cyclopropane. The colors to be used are defined by the chromaticity coordinates and illuminance factor of the CIE (International Commission on Illumination) colorimetric system.

ELECTRON TUBE MATERIALS. 1958. 242 pp. 6 x 9. American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. $3.90. This compilation of ASTM Standards for Electron Tube Materials was published in recognition of the growing importance of electronics not only to the field of communications, business and scientific calculating and data recovery machines, but also to missiles and satellites.

There are 41 standards relating to cathode materials, insulators, strip materials, wire, metallic and nonmetallic seals and miscellaneous materials.

BIBLIOGRAPHIE DER NORMEN. (Bibliography of standards on documentation). M. Schuchmann, Berlin. FID publ. 303, March 1958. Federation Internationale de Documentation, 6 Willem Witsenplein, The Hague, Netherlands. (Copies available by ordering from the American Standards Association, 70 East 45 Street, New York 17, N. Y.) $2.60. Lists national and international standards concerned with problems of documentation of 29 countries and the International Organization for Standardization. Arrangement is by country, and also by subject classification according to the Universal Decimal Classification (UDC). Subjects include bibliographical references, kinds of script, transliteration, librarianship, library furniture, abbreviations, sizes of paper, alphabetical arrangement, technical drawings, and photography, among others.

IIA INCINERATOR STANDARDS. April 1958. Incinerator Institute of America, 420 Lexington Avenue, New York 17, N. Y. $0.25. This set of standards is offered by the Incinerator Institute of America, association of incinerator manufacturers, as the basis for community codes and as a means of improving and upgrading the industry's products to conform to modern requirements of air pollution control.

RECOMMENDATIONS FOR RADIO-FREQUENCY CABLES. PART I: GENERAL REQUIREMENTS AND MEASURING METHODS. *IEC Publication 96-1. 1958. First edition.* International Electrotechnical Commission, 1 rue de Varembé, Geneva, Switzerland. (Copies available from the American Standards Association, 70 East 45 Street, New York 17, N. Y.) $3.00. Applies to flexible or semi-flexible radio-frequency cables of coaxial or twin conductor types with dielectric of solid, air-spaced, or semi-airspaced types of thermoplastic low-loss polymeric resin or thermosetting compound, or mineral material, designed for use in radio-communication equipment and in electronic devices employing similar techniques. Part I specifies uniform requirements for judging the electrical, climatic, and mechanical properties of radio-frequency cables and test methods therefor.

This international recommendation has been explicitly approved by 13 IEC member-bodies.

RADIATION EFFECTS ON MATERIALS. Vol. II—STP 220. 1958. 140 pp. Hard Cover. 6x9 in. American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. $3.75. Second of a series of symposiums sponsored jointly by ASTM and the Atomic Industrial Forum and presented as a contribution to the understanding of existing code and specification values as they apply to nuclear reactor structures and components. The known properties of materials must be evaluated in the light of actual reactor operating conditions. By adapting and interpreting the vast backlog of data on unirradiated materials with the sparse but accumulating knowledge of irradiated materials, it is stated that cautious extrapolation within the limits of experimental work can be allowed.

WHAT IS YOUR QUESTION?

How are new improvements in railroad equipment design introduced through the Association of American Railroads for interchange use?

New improvements in railroad equipment design are first handled with the appropriate AAR Committees, which then report and make recommendations to the General Committee. If the design is considered satisfactory it may be accepted as standard or in case service tests are desirable to evaluate the device more fully it may be considered an experimental design or alternate standard. These items are also placed on letter ballot and subject to vote of the entire AAR membership so railroads have such matters referred to them for consideration even though they may not be represented on the committee. New standards are thus developed and approved as improvements in design and technological progress is made.

—Reply by A. S. Pedrick, Southern Pacific Company, and W. M. Keller, Association of American Railroads, to question asked at the National Conference on Standards, San Francisco, California, November, 1957.

Standards once adopted tend to remain static while new developments are constantly being offered by industry. How are standards attuned to new developments?

Standards are usually attuned to new developments by the prior trial of promising new products as special items over a sufficient period to demonstrate their desirable properties. Government agencies sometimes encourage the development of new products by educational orders and promulgate purchase specifications for such products in advance of industry standardization.

—Reply by Dr A. T. McPherson, National Bureau of Standards, to question asked at the National Conference on Standards, San Francisco, California, November, 1957.

Has the American Standards Association given any consideration to the use of the Modified Adams Chromatic Value System in connection with the specification of standard colors? In attempting to use the American Standard colors on some of our products this company has found several disadvantages in the Munsell System and visual comparison of colors. We convert the Munsell notation to the Adams, establish the limits (usually 2 NBS units), and use a Colormaster Differential Colorimeter for measurements.

H. W. Robb, General Electric Company, chairman of Sectional Committee Z55, Colors for Industrial Apparatus and Equipment, replied to this question. The committee has not specifically considered use of the Adams system, he said, although in his opinion both the Munsell System and the Adams system are good. In view of the work that has been done, he believes there might be some reluctance to change if the change is merely a matter of preference. He gave the following history of the use of the Munsell System in the American Standard Industrial Gray Finishes, Z55.1-1950:

"Originally, practically all color systems were based upon physical specimens, requiring dependence upon central sources for the maintenance of primary standards used for visual comparison. With the introduction of the G-E spectrophotometer, we in General Electric thought this was the answer to our problems and in 1936 we set up our company standards based on the use of this instrument with the thought that we at last had a more scientific means for establishing and maintaining a color standard. Others apparently had the same idea since the instrument was apparently used by various companies, the National Bureau of Standards, and other organizations.

"While we had a more scientific basis for our standards by instrumentation, we found by actual experience that the basic ICI specifications were not intelligible to the layman and also that such specifications were not practical at that time for industrial specification. Subsequently we found that the Munsell system could serve the latter purpose with the added advantages that the system was established by a nonprofit color company, an extensive amount of work had been done for translation of basic ICI specifications into Munsell Notations, and that this method of designation and correlation had been provided for such widespread systems of color specimens as the Munsell Book of Color and the Textile Color Cards. Munsell designations are also available now from the Container Corporation for the color specimens in the Color Harmony Manual which is based on the Ostwald system.

"When we started to develop an American Standard, the Munsell Color Company was changed into a public color foundation to facilitate the use of the designation system without proprietary restrictions.

"It is thus seen that we do use instrumentation in establishing standards, have an understandable system of designations, and have available numerous series of color specimens to aid communication of the designations and to use for visual comparison if desired."

Are standards followed in the wood office furniture industry in connection with drawer lengths and depths?

In reply to this question, A. R. Hutchinson, National Office Management Association, chairman of Sectional Committee X2 on Office Equipment and Supplies, called attention to the American Standard Dimensions of Desks and Tables for General Office Use, X2.1.1-1951. Although this standard is not specifically on drawer lengths and depths, the committee that developed the standard prepared a table of drawer sizes as a result of a questionnaire sent to members of the National Office Management Association. This table is available from ASA to anyone interested.

MAN'S first attempt to communicate in writing was, in the Stone Age, by drawing pictures. Yet, considering that drawing talent varies widely among different individuals, misunderstandings among cave men must have been frequent. A poor draftsman who wanted to say, "There are reindeer in the pine grove," may have been understood to say, "The goats have eaten my crab apples."

To avoid such misunderstandings, pictures were simplified and standardized. Each standard symbol — a so-called ideograph — meant a specific thing or idea. The hieroglyphs of the ancient Egyptians were ideographs. And so are the Chinese characters still used today.

The next step was the development of standard symbols to represent sounds or combinations of sounds. The first people known to have used standard sound symbols, about 3,000 years ago, were the Phoenicians. The Greeks derived their alphabet from them, giving the presently used name to the system (from *alpha* and *beta,* the first two Greek letters). Our modern Western alphabets — Latin, Greek, and Russian Cyrillic — are derived from the ancient Greek alphabet.

An alphabet is a standard system for sound symbols. A dictionary standardizes the use of such symbols for each word known in a particular language. And thus we get a complete standard for written communications.

There are, of course, other written systems of communications beside the written word — and important among them are the drawings used by designers, engineers, and mechanics. Uniformity and utmost accuracy and clarity are indispensable in these engineering drawings.

American industry found that it needed a standard "draftsman's dictionary" when during and after World War II government work and sub-contracting assumed an increasing importance. It became apparent that drawing practices among different industries and government departments varied considerably. Many drawings used on contract work had to be explained and redrawn at great cost and with much delay, and misunderstanding and mistakes were frequent. Moreover, during World War II, the American, British, and Canadian nations pooled their engineering and manufacturing resources in the production of arms for their common defense. However, drawing practices in the three countries varied considerably, with the result that the manufacture of many vital defense products was often delayed for many months, and enormous unnecessary costs were incurred.

Since that time, English-speaking engineers have been following the example of the ancient Egyptians who standardized their hieroglyphs. In the United States, representatives from engineering, industrial, trade, and government organizations have developed the new American Drafting Standards Manual Y14, seven sections of which have been published while another ten are in preparation. Similar work has been carried on in Great Britain and Canada.

Representatives of the three countries have met at regular intervals to coordinate the three national drafting standards so that drawings prepared in one country can be readily understood and used in the factories of the other countries.

Eventually, it is expected, English-speaking engineers all over the world will understand each others' drawings even better than each other's language.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

632.9 PLANT PROTECTION. PEST PREVENTION

Australia (SAA)

Copper preparations for agricultural fungicides N.23-1956

France (AFNOR)

Quick method for determination of insecticide power acting by contact NF X 41-508

Penetration test of wood preservatives NF X 41-509

Common names for pesticides NF T 72-001

6 stds for different wood protective chemicals NF T 72-050/5

India (ISI)

Common names for pesticides IS 885

BHC emulsifiable concentrate IS 632

DDT emulsifiable concentrate IS 633

662.75 LIQUID FUELS. MINERAL OIL. TECHNOLOGY

Australia (SAA)

Welded or brazed steel cylinders for low pressure liquefiable gases and liquefied petroleum gases B.115-1958

Austria (ONA)

Specification of gasoline ÖNORM C 1103

Specification of Diesel fuel ÖNORM C 1104

Czechoslovakia (CSN)

Diesel fuel CSN 65 65 06

Aviation gasoline CSN 65 65 19

France (AFNOR)

Liquified petroleum gases, method of sampling NF M 41-001

Germany (DNA)

Determination of sulfur content by Grote-Krekeler method DIN 51768

Determination of total sulfur content by Sandlar-Lamp method DIN 51771

3 stds for special benzine DIN 51630/2

Sampling of liquid gas DIN 51610

Determination of oil and tar content DIN 51614

Determination of water content by Karl Fischer method DIN 51777

Benzole, technical DIN 51633

Diesel fuel, test for filterability by Hagemann and Hammerich method DIN 51770

Liquid fuel, Doctortest DIN 51765

Special gasoline for outside lanterns DIN 51634

Testing light petroleum products for flammability DIN 51783

Determination of hard asphalt contents in liquid fuels DIN 51557

Determination of bromine number in liquid fuels DIN 51774

Fuel oils, minimum requirements for DIN 51603

Liquid fuels, determination of flash point by Pensky-Martens method DIN 51758

Test for sulfonation index DIN 51792

Israel (SII)

Hydrocarbon fuels: benzine SI 90

Spain (IRATRA)

4 stds for aviation gasoline, types 80, 100/130, 115/145, 91/96 UNE 51501/4

Fuel, type J.P. 4, for turbo-reactors UNE 51506

Liquid for aviation compass UNE 51515

USSR

Liquified petroleum gases for household use GOST 7459-55

Diesel fuel GOST 5304-54

669.1 FERROUS METALS

Belgium (IBN)

Determination of manganese content in steels and cast iron NBN 438

Determination of manganese content in steel, cast iron, spiegels and ferro-manganese by gravimetric method NBN 463

Canada (CSA)

Specification for galvanized telegraph and telephone steel line wire G3-1958

China

2 stds for steel bars for concrete reinforcement CNS 478/9 A 2/3

2 stds for steel wire for general use CNS 644/5 G 13/4

2 stds for steel spring wire CNS 646/7 G 15/6

Germany (DNA)

Ribbed spring steel bands DIN 1570

Testing butt welds for durability DIN 50128

3 stds for flat-rolled steel, cold-bevelling and bending of DIN 6935

Common structural steels, quality rules DIN 17100

Hungary (MSZH)

Steel: terminology, symbols and nomenclature MSZ 106-56

3 stds for chemical analysis of ferro-chromium, ferro-vanadium, and ferro-titanium alloys MSZ 20994/5, 20997-56

India (ISI)

Hot rolled steel strips (baling) IS 1029

Rolled steel beam channel and angle sections IS 808

Steel castings for general engineering purposes IS 1030

Pig iron IS 225

Rolled steel sections, T-bars IS 1173

Rivet bars for structural purposes IS 1148

High tensile rivet bars for structural purposes IS 1149

Ferro-chromium IS 1170

Ferro-manganese IS 1171

Italy (UNI)

3 stds for steel bands for railway springs UNI 3960/2

Steel plates over 4.76 mm thick, hot-rolled for boilers and pressure vessels UNI 3965

Steel Aq75 for hot-rolled tramway rails UNI 3966

6 stds (experimental) for different grades of carbon steels UNI 3983/8

2 stds for special alloy steels for valves of internal combustion engines UNI 3992/3

Flat bar with asymmetric bulb shape UNI 3994

3 stds for different steel wire netting UNI 3995/7

Barbed wire UNI 3998

Different steels for hot riveting UNI 4005

Special steel for castings with high mechanical characteristics UNI 4010

Japan (JISC)

Cold rolled steel strip JIS G 3311-1952*

Carbon tool steel JIS G 4401-1956*

High speed steel JIS G 4403-1956*

Alloy tool steel JIS G 4404-1956*

4 stds for different types of alloy steel castings JIS G 5111, 21/2, 31-1956*

General rules for inspection of steel JIS G 0303*

General procedure for testing and inspection steel pipes JIS G 0304*

Dimensions and weights of flat steel for springs JIS G 0406*

Method of austenitic grain size test of steel JIS G 0551*

Method of macro streak flaw test of steel JIS G 0556*

Method of test for hardenability of steel JIS G 0561*

Classification standard for iron and steel scraps JIS G 2401*

Rolled steel for general use JIS G 3101*

3 stds for rolled steel for rivet, chains and welded structure JIS G 3104/6*

3 stds for steel pressure pipes JIS G 3433/5*

3 stds for carbon- and alloy-steel tubes JIS G 3436/8*

Poland

Steel sheets for manufacturing saw blades PN H-92139

Thin carbon steel sheets for embossing PN H-92201

Alloy steel rods PN H-93002

Spain (IRATRA)

Ferro-manganese UNE 34151

Ferro-silicon UNE 36152

Sweden (SIS)

Iron and steel. Survey MNC 1

Cast iron. Survey MNC 705

Steel for rivets, screws, bolts and chains. Survey MNC 840

Automatic screw steel. Survey MNC 845

Tool steel MNC 880

Stainless steel. Survey MNC 900

Sampling method for tensile strength test of steel SIS 11 01 20

Charpy impact test method for metals SIS 11 23 57

Cast iron grade 01 35 SIS 14 01 35

Chain steel grade 12 35 SIS 14 12 35

Chain steel grade 12 26 SIS 14 12 26

Tool steel grade 18 80 SIS 14 18 80
Automatic screw steel grade 19 12 SIS 14 19 12
Automatic screw steel grade 19 22 SIS 14 19 22
Automatic screw steel grade 19 40 SIS 14 19 40
Automatic screw steel grade 19 57 SIS 14 19 57
Automatic screw steel grade 19 73 SIS 14 19 73
Tool steel grade 20 92 SIS 14 20 92
Chain steel grade 21 08 SIS 14 21 08
Tool steel grade 21 40 SIS 14 21 40
Tool steel grade 22 60 SIS 14 22 60
Tool steel grade 23 10 SIS 14 23 10
Tool steel grade 23 12 SIS 14 23 12
Stainless steel grade 23 46 SIS 14 23 46
Tool steel grade 25 50 SIS 14 25 50
Tool steel grade 27 10 SIS 14 27 10
Tool steel grade 27 22 SIS 14 27 22
Tool steel grade 27 30 SIS 14 27 30
Tool steel grade 27 50 SIS 14 27 50
Steel pipes used in food industry SMS 429

United Kingdom (BSI)

Methods for the analysis of iron and steel: Arsenic in iron and steel BS 1121:Part 38:1958

USSR

Hot- and cold-rolled steel sheets up to 4 mm thick, standard sizes GOST 3680-57
Hot-rolled steel plates, heavy standard sizes, from 4 to 160 mm thick GOST 5681-57
2 stds for hot-rolled steel shapes of different profiles GOST 8319-20-57
Steel wire, galvanizes GOST 360-57
Sheet iron, polished GOST 1127-57
Steel band in rolls, cold-rolled GOST 8596-57
Steel band in rolls, hot-rolled GOST 8597-57

Yugoslavia (JUS)

4 stds for heavy and medium gage steel plates JUS C.B4.012,-015,-110/1
2 stds for carbon steel rails, over 20 kg/m JUS C.K1.020/1
4 stds for electro-galvanizing steel products JUS C.T7.111/4

669.2 NON-FERROUS METALS

Bulgaria

Babbit metal BDS 2730-57
Non-ferrous sheet and strips, hot or cold rolled, standard sizes BDS 2735-57

China

5 stds for brass wire and bars CNS 368/72 H 7/11
2 stds for aluminum wire CNS 648/9 H 12/3
3 stds for lead wire and bars CNS 650/2 H 14/6
6 stds for wires, non-ferrous, testing of CNS 653/8 H 17/22

France (AFNOR)

Determination of bismuth in aluminum alloys NF A 06-583
Polarographic method for determination of lead and cadmium contents in zinc alloys NF A 06-606

Germany (DNA)

Pure aluminum, bars, wires, sections, pressed and forged pieces of DIN 1790

India (ISI)

2 stds for wrought aluminum and aluminum alloys IS 735/6
Silicon bronze ingots and castings IS 1028

Italy (UNI)

Extruded shapes of aluminum alloy, classification, tolerance UNI 3879
4 stds for method of chemical analysis of different non-ferrous ores UNI 3892/6
Aluminum ingots, different grades UNI 3950
Aluminum and aluminum alloy tubes UNI 3991
3 stds for testing anti-corrosive quality of zinc coating on metals UNI 4007/9

Japan (JISC)

General rules for inspections on non-ferrous metals JIS H 0321*
General requirements for test of tungsten and molybdenum for lamps and vacuum tubes JIS H 4041*
7 stds of tungsten wire and rod for different use in electronic tubes JIS H 4401/2, 11/14, 21*
4 stds for molybdenum wire and rod for different use JIS H 4441/4*
Tungsten molybdenum alloy wire JIS H 4451*
Cemented carbide alloy for sintered tool tips JIS H 5501*

Poland

Aluminum alloy sheets PN H-92742
Zinc container of dry cell PN H-94800

USSR

Platinum, palladium, iridium, rhodium, and their alloys, markings GOST 8395-57
4 stds for platinum, palladium, iridium, rhodium, and their alloys, strips and wires GOST 8396/9-57
2 stds for platinum, palladium, gold, silver, and their alloys, foils GOST 8400/1-57

Yugoslavia (JUS)

Chemical analysis of different grades of brass JUS C.D2.100
12 stds of different brass shapes, drawn and extruded JUS D.D3.120,-520/31
3 stds for brass plates, sheets, strips JUS C.D4.120,-520/1
2 stds for brass tubes JUS C.D5.120,-520
3 stds for brass wire, cold-drawn and extruded JUS C.D6.120,-520/1

674 WOOD INDUSTRY

Finland (SFS)

2 stds for knives for round cutter heads and planers O.I.50,-51

France (AFNOR)

Wooden office furniture. Minimum requirements NF D 60-701

India (ISI)

Code of practice for use of structural timer in building (material, grading and design) IS 883
Medium strength aircraft plywood IS 709

Israel (SII)

Plain plywood SI 37
Pre-fabricated units for wooden houses SI 196

Italy (UNI)

2 stds for nomenclature of wood species growing and cultivated in Italy UNI 2843/4
Nomenclature of imported exotic wood species UNI 3917

Netherlands (HCNN)

5 stds for wooden ladders for general purposes NEN 937, 1731/4

Poland

Lumber, defects of PN D-01000
Sound board from decidious species of lumber PN D-95070

Portugal (IGPAI)

Cork grains, definition and classification NP-114
Cork grains, dimension, specific gravity and humidity content NP-115
Anomaly and defects of lumber, provisory terminology P-180

Union of South Africa (SABS)

Standard specifications for wood preserving creosotes SABS 538/539-1956

677.05 TEXTILE MACHINERY, PLANT AND EQUIPMENT

Czechoslovakia (CSN)

45 stds for different parts of textile machinery CSN series 79 44 79 45

Germany (DNA)

Batten shoe DIN 64640
Spindles for natural and artificial silk DIN 64676
Cotton spinning machines DIN 64082/3
Silk loom beater DIN 64648
Silk loom pickers DIN 64652
Loom, flat-head, square-neck bolt for DIN 63301
Looms of nominal width from 800 to 3500mm DIN 64550
Waste cleaner (willow) DIN 64160
Rag beating machine DIN 64161
Beating-opener DIN 64162
Thread-opener DIN 64163
Cutting machine DIN 64164
2 stds for different carding machines DIN 64165/6

India (ISI)

2 stds for blanks and boards for lay races of jute looms IS 1042/3
Cotton fabric for covering plywood in aircraft IS 1045
Built bobbins for old-type dry jute spinning frames IS 1048
Box back blanks for jute looms IS 1041

Japan (JISC)

2 single-flange ring types N and W JIS L 5105/6
Shuttle for cotton loom JIS L 6401
Inspection of shuttles and spindles JIS L 1710/4
5 stds for different parts of loom JIS L 5101/4, 5130
8 stds for different parts of spinning machines JIS L series 51
2 stds for nomenclature of hand-knitting machine parts JIS L 0202/3
Wire heald for export JIS L 1703
Textile bobbin and skewer for export JIS L 1701
Knitting needle for hand-knitting machine for export JIS L 1803
Traveller for cotton spinning machine JIS L 5129

Mexico (DGN)

Leather pickers for loom DGN I 11-1956

Spain (IRATRA)

Working width of cards for cotton UNE 4020
Verification of regularity of loom combs UNE 4024
Cylindrical containers for cotton, wool, cut silk and synthetic fibers UNE 40019

USSR

Cotton fluffing machines GOST 7356-55

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news briefs .....

● Middle C and the American Standard A that equals 440 cycles per second are the focus of a controversy involving the pitch of tuning forks.

So much difficulty has been encountered that the Committee on Apparatus for Educational Institutions of the American Association of Physics Teachers took up the subject recently. The committee conducted a survey by circularizing all members of the AAPT who were also members of the Acoustical Society of America. They were asked to give their views on the question of tuning fork frequencies. The problem was also taken up by the Committee on Musical Acoustics, the Committee on Psychological and Physiological Acoustics, and the Committee on Architectural Acoustics, all of the Acoustical Society of America.

The majority of those contacted were strongly opposed to the present tuning forks which are based on a middle C equalling 256 cycles per second.

They were in favor of a series of forks yielding intervals based on the American Standard, A equals 440 cps, which gives a middle C of 261.6 cps. This has been the standard tuning frequency in the United States for 40 years as well as having been adopted as American Standard, and it is now confirmed internationally by Recommendation R16-1955 of the International Organization for Standardization.

The AAPT members also were in favor of a series of tuning forks of 1000, 500, 250, and 125 cps, and some desired to extend this series to include 2000 and 4000 cps.

As a result, the Committee on Apparatus for Educational Institutions is strongly recommending that manufacturers make available to the physicists in this country these two series of forks, eliminating completely the series based on what they call the obsolete C equals 256 cps.

● James E. Coombs, president of Baker & Coombs, Inc, Morgantown, W. Va, recently visited England as a representative of the American Standards Association to discuss the Modular Method of building construction with representatives of 13 European nations. Mr Coombs is vice-president of the Modular Building Standards Association and a member of ASA Sectional Committee A62 on Coordination of Dimensions of Building Materials and Equipment (Modular Method). The meeting in England was the latest in a series of meetings of the Working Group of Project 174 of the European Productivity Agency of the Organization of European Economic Cooperation. The EPA Project 174 was initiated in 1954 to explore the possibilities and benefits of modular coordination in European construction.

The American Standards Association has contracted with the European Productivity Agency to participate directly in the second phase of the project through the preparation of a report on actual U. S. experience. Mr Coombs will direct the preparation of the U.S. report.

Austria, Belgium, Denmark, France, Federal Republic of Germany, Greece, Italy, the Netherlands, Norway, Sweden, and the United Kingdom are participating in the project.

● Major revisions in the American Standard for General Purpose Photographic Exposure Meters concern shutter markings, exposure values, and directional characteristics of the exposure meter. This American Standard, designated as PH2.12-1957, covers meters for general use. It has been approved and published by the American Standards Association, and replaces American Standard Z38.2.6-1948.

The standard is intended to serve as a guide to manufacturers of exposure meters in designing and testing their products. It defines the terms used in describing the performance of exposure meters and establishes limits where practical. All major producer and consumer interests are represented on the ASA project for photographic sensitometry of which exposure meters are a part.

The standard now includes alternate and preferred series of time interval designations for shutter markings. The advantage of the new series is that all markings are in approximate power - of - two - steps with no large intervals as were used in the past between 1/10 and 1/25 second.

The standard also includes the concept of units of exposure defined as "exposure values." These units are identical with those termed "light values" shown on Compur shutters and used on certain foreign-made cameras. The exposure values for ordinary usage are a series of integers between 1 and 18. Adoption of the new exposure units is based on a year's observation of their use by members of Subcommittee PH2-11 on Photoelectric Exposure Meters and PH3-1 on Cameras and Related Apparatus. Committee members felt that these exposure values have made photography easier for many people, are responsible for simplification in the design and use of built-in exposure meters, and have resulted in numerous other improvements.

Another change in the standard is the substitution of new methods for measuring and expressing the directional characteristics of an exposure meter. The new method defines more completely the directional acceptance characteristics of an exposure meter which shall be determined in terms of its "acceptance factor" and its "specific acceptance angles." This standard is one of more than 170 American Standards covering many aspects of still photography.

Copies of the American Standard PH2.12-1957 for General Purpose Photographic Exposure Meters may be obtained from the American Standards Association at 75 cents.

● The Textile Distributors Institute recently appeared before the Senate Committee on Interstate and Foreign Commerce and urged that no legislation be enacted to require identification of fiber content in tex-

tiles. The Institute asked that Congress give the industry an opportunity to work out end-use performance standards for all textiles along the lines of the already existing American Standard Performance Requirements for Rayon and Acetate Fabrics, L22.

● The American Ordnance Association conferred the Blandy Medal this year on Vice Admiral George F. Hussey, Jr, USN (Ret), managing director of the American Standards Association. Admiral Hussey, who served as chief of the Navy's Bureau of Ordnance during World War II, was president of the New York Post of the American Ordnance Association after the war, and president of the national organization in 1955-56. He was one of Admiral Blandy's close associates in Navy Ordnance.

● "Economy with the new American Drawing Standard" was the theme of the first public seminar on the American Drafting Standards Manual, Y14. The seminar was conducted April 29 and 30 by the University of Illinois' Department of General Engineering, Division of University Extension, at Urbana. Fifty representatives from industry and academic professions attended the sessions. Professor R. P. Hoelscher, head of the University's General Engineering Department, and chairman of Sectional Committee Y14, was chairman.

Professor Hoelscher expressed the hope that similar seminars would be held at other places throughout the United States so as to ensure wide understanding and adoption of the new manual as quickly as possible.[1]

The first seven sections of the American Drafting Standards Manual are now available: 1, Size and Format; 2, Line Conventions, Sectioning and Lettering; 3, Projections; 4, Pictorial Drawing; 5, Dimensioning and Notes; 6, Screw Threads; 7, Gears, Splines, and Serrations.

Ten additional sections are in preparation. They are: 8, Castings, 9, Forgings; 10, Metal Stamping; 11, Plastics; 12, Die Castings; 13, Springs, Helical and Flat; 14, Structural Drafting; 15, Electrical Diagrams; 16, Tools, Dies, Gages; 17, Fluid Power Diagrams.

[1]The American Standards Association is now investigating the possibility of doing this. Suggestions will be welcome.

Papers delivered at the seminar were:

Graphic Illustration (Pictorial Drawings) in Sales, Services, and Production, by Frederick Jantz, Design Group Leader, Graphic Illustrations, Oldsmobile Division, General Motors Corporation. This paper will be published in a future issue of *The Magazine of Standards.*

True Position Dimensioning, by T. J. O'Connor, Military Information Methods and Standards Department, Bell Telephone Laboratories (For a previous discussion of "True Position on Drawings" see article by N. E. Brown and Joseph Stannard, *The Mag of Stds,* Nov 1957, p 327.)

Tolerancing of Form, by George Noble, Standards Engineer, Dominion Engineering Works, Montreal, Canada. (Previously, a discussion of this subject was published in *The Mag of Stds,* see "Maximum Material Condition on Drawings" by P. G. Belitsos, Nov, 1957, p 329.)

Maximum Material Concept Applied to Tolerancing of Form and Position, by P. G. Belitsos, Standards Engineer, Aircraft Gas Turbine Division, General Electric Company. (Previous articles on this subject by Mr Belitsos were published in *The Mag of Stds,* Aug, 1957, p 227, and Nov, 1957, p 329.)

Proposed Symbols for Tolerancing of Form and Position, Stuart C. Miller, Bureau of Ordnance, Navy Department (For previous article by Mr Miller on symbols for tolerancing, see *The Mag of Stds,* Nov, 1957, p 333.)

● Fifty definitions recommended as standards for use in corrosion control communications have been compiled and presented for publication in *Corrosion,* official magazine of the National Association of Corrosion Engineers, by the Inter-Society Corrosion Committee's subcommittee on standard definitions and terminology. The 50 definitions are to be added to an earlier list of 53 terms prepared by the group under Anton des Brasunas, American Society for Metals, as chairman. The earlier list was published in the February 1958 issue of *Corrosion.*

The Inter-Society Corrosion Committee is composed of 32 representatives from technical societies and organizations interested in improving the exchange of corrosion information between all who are interested in the problem.

In addition to information exchanged between United States technical societies, reports from correspondents in France, Germany, Italy, Japan, New Zealand, Spain, and Switzerland have been received by the ISCC subcommittee on relations with foreign organizations.

● There is no need to annoy your neighbors with smoke, odor, and fly ash if you make sure that your gas incinerator conforms to the latest revision of the American Standard Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6-1957.

Under the sponsorship of the American Gas Association, Inc, the standard was originally developed, and has now been revised, by representatives of gas companies, manufacturers, insurance companies, consumer groups, and other national organizations concerned with the manufacture, maintenance, safety, and operation of gas incinerators. The revision became effective on January 1, 1958, for all new incinerators made after that date.

An incinerator will be considered capable of burning domestic waste and paper without emissions of smoke, odor, or fly ash if it meets certain minimum requirements stipulated in the revised standard.

Seven ounces of potatoes, three ounces of cabbage, two ounces of unpeeled oranges, two ounces of white bread, 2.4 ounces of rice, one ounce of beef suet, and specified quantities of water, corrugated cardboard, newspaper, and waxed paper have to be burned when testing the effectiveness of an incinerator.

Among other requirements of American Standard Z21.6-1957 are construction, performance, burner ratings, and safety devices of domestic incinerators for all types and combinations of gases, including natural, manufactured, and liquefied petroleum gases.

The first version of the standard was published in 1929. Progress in the utilization of gas, and improvements in the manufacture of incinerators, made several revisions necessary. The present—sixth—revision of the standard was sparked by an incinerator research program of the American Gas Association, conducted in the years 1955 to 1957. The results of this research program indicated that incinerators could be designed that would operate practically without giving off smoke, odor, and particles. Therefore, in order to reduce the complaints about the operation of existing equipment, a

revision of the standard was prepared to include these improvements and approved as American Standard.

Copies of American Standard Z21.6-1957, Approval Requirements for Domestic Gas-Fired Incinerators, can be obtained at $1.50 each.

● When indoor firing ranges, recently approved by the U.S. Air Force, are constructed at any of the Air Force bases, they must meet the requirements of the American Standard Minimum Design Loads for Buildings and Other Structures, A58.1-1955. Blueprints for the ranges warn the bases to follow the American Standard. Two types of indoor firing ranges have been approved, one for 10 positions and the other for 20 positions. The new firing ranges are part of the Air Force's new program to increase the marksmanship of all its personnel.

● In prefabricating gas piping for the Hope Natural Gas Company at its new Sweeney station in West Virginia, the Dravo Corporation of Pittsburgh announces, its welding and fabricating operations followed American Standards. The gas piping increased the flow of gas from two underground storage fields by 10 billion cubic feet per year. The American Standard Safety Code for Electric and Gas Welding and Cutting Operations, Z49.1-1950, (now revised and designated Z49.1-1958) the American Standard Code for Pressure Piping, B31.1-1955 and Section 8 of the Code for Pressure Piping, Gas Transmission and Distribution Piping Systems, B31.1.8-1955, are the standards that have special application to Dravo's operations on this job.

● To prevent back siphonage in livestock watering devices and pollution of farm water systems, tests are now being carried out at Michigan State University. Devices that meet the test requirements will meet the provisions of the American Standard Backflow Preventers in Plumbing Systems, A40.6-1943. The test program is being carried out with the cooperation of the U. S. Public Health Service and the Barn Equipment Association. J. S. Boyd and W. H. Sheldon, both of Michigan State University, describe the program in the March 1958 issue

(*Continued on page* 214)

Standards Outlook

by LEO B. MOORE

Mr Moore is Associate Professor of Industrial Management, Massachusetts Institute of Technology, where he teaches a full-term course in industrial standardization.

Standards Musings

When you are interested in a field such as standardization, you find it hard not to muse about personal experiences in the light of your interest. Experiences mean nothing to any man unless they are converted into learning opportunities through the process of thinking about them. Otherwise what we refer to as "years of experience" may really mean nothing more than "years of practice." Practice may make perfect, but experience with musing makes for perfection.

An uncle of mine, driving down the road, always veers toward the curb when a car approaches. He told me that he does this because once such a car had a blow-out, cut across the road, and nearly hit him. I wonder how often, on the basis of a single experience, we set up a standard that we cling to doggedly. All the mounting evidence that road accidents are caused by human, rather than mechanical, failures will apparently never change uncle's standard.

Recently my wife, anticipating a gift situation, dragged me into a famous Boston retail basement. I assured her that I knew my size and that she could obtain the garment while I waited in the relative peace of the outer areas. Her wifely withering look moved me to follow in her wake through the milling crowd. At the selling area, however, I had the unusual experience of being given plenty of room as other women watched me try on the assorted offerings. I suddenly realized that I was the model of the moment as they in turn noted the fit, compared me to the man at home, and asked me what size I usually wore as compared to the markings on the garments. I wonder whether as standards engineers we spend enough time with those who use the standard?

The marketing innovation of one of our leading petroleum companies in the form of a third grade of gasoline has had interesting implications and reactions on the standards of its competitors. Personally, I found my own reaction enlightening. For years I had used a single grade of a single company, but with this change I found myself experimenting with different grades from different companies. The cigarette industry now offers its product regular or king-size, with or without menthol, with or without filter, in a flip-top box, or in the old familiar pack. My corner drug store says that there is a problem of keeping the variety in stock, but more people now state exactly what they want. The record industry thoroughly abandoned the 78 rpm standard with the introduction of two other speeds and found itself revitalized. Who says that standards are static, interfere with creativity, and impede progress?

I have acquired the habit on trips of flying to the nearest airport and renting an automobile to take me to my final destination. I find that this procedure provides me the convenience of my own car and the speed of the plane. However, I have also learned that there is considerable difference in the location and operation of automobile controls and the standard shift has long since gone out the window. I wonder if there are some sensitive areas where standards need more investigation and testing before they are introduced or changed.

I enjoy musing about my experiences and I hope that you do, too.

of *Agricultural Engineering*. To date, 26 livestock watering devices have been tested, they report. Of these, five failed the test. Three of those that failed have been redesigned and subsequently passed the test.

● The American Standard for Machine Pins, including dowel, taper, clevis, grooved, and cotter pins, has been revised and designated American Standard B5.20-1958.

Tables for grooved pins, widely used in the automotive industry, are added. Other new material includes under head to hole and end of pin dimensions, hole size tolerance, drill sizes for clevis pins, and chisel points for cotter pin and styles. Chamfer values and tolerances on straight pins and unhardened ground dowel pins are revised.

The standard is sponsored by the American Society of Tool Engineers, Society of Automotive Engineers, National Machine Tool Builders' Association, Metal Cutting Tool Institute, and The American Society of Mechanical Engineers (which has also published the standard).

Copies of American Standard B5.20-1958 are available from ASA at $1.50 each.

● Says Kenneth W. Lineberry, president, Black, Sivalls & Bryson, Inc:

"Some companies hope to cut costs by reducing selling and administrative expenses; others by increasing productivity through wage incentive plans; some expect to increase the purchasing department's efficiency; some are trying to redesign product lines to effect reductions in manufacturing costs; others are introducing new product lines and eliminating unprofitable lines; some companies hope to offset mounting costs with higher selling prices and by more aggressive selling and advertising.

"These, and efforts in many other directions, are constructive and offer promise of worthwhile results.

"But probably the most rewarding over the long pull, the means of cost reduction which is most permanent and lasting—and will help to reduce all elements of cost, is industrial standardization. Standardization from the corporation executive's point of view is an effective means of reducing all elements of cost. And no department or division of the company can be more effective in initiating, selling, developing, and maintaining standardization within the company and within the industry than the purchasing department."

—From an address before the Eleventh Annual Southwest Purchasing Conference, Oklahoma City, Oklahoma, September 26, 1957.

● The new edition of Power Cranes and Shovels, Commercial Standard CS90-58, is now available, according to the Commodity Standards Division, U. S. Department of Commerce. It applies to machines of the convertible full-revolving type on crawler, truck, and wheel mountings. Sizes are in the so-called "commercial" ranges for shovels and cranes, with provisions for clamshell, dragline, pile driver and hoe operation.

The new standard is a revision that combines the former domestic and export standards, in accordance with recommendations of the Power Crane and Shovel Association, and has been widely endorsed by others in the industry. Its chief purpose is to establish uniform methods for guidance in specifying features of the machines, and in presenting data concerning their construction, performance, and control. The standard includes safety requirements, recommendations for export, labeling, certification of compliance with the Commercial Standard, and definitions of terms peculiar to the industry.

Copies of CS90-58 may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The price is 20 cents per copy.

● A recent revision of the American Society for Testing Materials Standard Methods of Sampling and Testing Brick (ASTM No. C 67-57), has just been approved as American Standard A82.1-1958.

The methods cover procedures for sampling and testing brick for modulus of rupture (flexure test), compressive strength, absorption, saturation coefficient, effect of freezing and thawing, initial rate of absorption (suction), and efflorescence.

The 1958 edition reflects changes in the procedure for drying test specimens of half brick used in a 24-hour submersion test.

Copies are 30 cents each.

A NEW POLICY adopted by the Board of Directors of the American Standards Association encourages the use of American Standards and other material copyrighted by the American Standards Association. In doing so it makes this material available without charge to members of the Association unless its use will be in competition with the sale of the material and for the commercial advantage of the organization using it. A scale of prices has been set up for reproduction of American Standards in internal company standards and for reproduction in advertising, sales, and promotion booklets. These prices are as follows:

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Normally, there should be no charge for use of American Standards in technical handbooks and textbooks, the policy states.

"Since its founding in 1918, ASA's reputation, prestige, and tradition have been built on service to the public," the Board of Directors pointed out. "It welcomes every opportunity to join hands with others in furthering the standards movement as a means of advancing the national economy."

AMERICAN STANDARDS UNDER WAY

Status as of June 18, 1958

Legend — *Standards Council* — Approval by Standards Council is final approval as American Standard; usually requires 4 weeks. *Board of Review*— Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks. *Standards Board* — Approves standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

Note — Send check when ordering standards listed as published to avoid service charge for handling.

BUILDING AND CONSTRUCTION

In Standards Board

Areas in School Buildings, Method of Determining, Z65.2-

Areas in Public Buildings, Method of Determining, Z65.3-
Sponsors: National Association of Building Owners and Managers; Office of Education, Department of Health, Education and Welfare

CHEMICAL INDUSTRY

American Standards Approved

Trisodium Phosphate, Specification for, ASTM D 538-57; ASA K60.12-1958 (Revision of ASTM D 538-55T; ASA K60.12-1956)
Sponsor: American Society for Testing Materials

Common Name for the Pest Control Chemical 2-diphenylacetyl-1,3-indandione (diphacinone), K62.13-1958
Sponsor: U. S. Department of Agriculture

In Standards Board

Common Name for the Pest Control Chemical *O* - 2 - chloro - 4 - nitrophenyl *O,O*-dimethyl phosphorothioate (dicapthon), K62.14-

Common Name for the Pest Control Chemical 2-chloro-2-diethylcarbamoyl-1 - methylvinyl dimethyl phosphate (phosphamidon), K62.15-

Common Name for the Pest Control Chemical *O,O*-dimethyl *S*-(*N*-methylcarbamoylmethyl) phosphorodithioate (dimethoate), K62.16-
Sponsor: U. S. Department of Agriculture

DRAWINGS, SYMBOLS, AND ABBREVIATIONS

American Standards Approved

Letter Symbols for Hydraulics, Y10.2-1958 (Revision of Z10.2-1942)

Letter Symbols for Petroleum Reservoir Engineering and Electric Logging, Y10.15-1958
Sponsor: American Society of Mechanical Engineers

American Drafting Standards Manual, Section 11, Plastics, Y14.11-1958 (Partial revision of Z14.1-1946)
Sponsors: American Society of Mechanical Engineers; American Society for Engineering Education

In Standards Board

Graphical Symbols for Fluid Power Diagrams, Y32.10-
Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

ELECTRIC AND ELECTRONIC

American Standards Approved

Metallic Coverings for Insulated Wire and Cable, Specifications for, C8.15-1958 (Revision of C8.15-1942)
Sponsor: Electrical Standards Board

Fluorescent Lamp Ballasts, Methods of Measurement of, C82.2-1958
Sponsor: Electrical Standards Board

In Board of Review

Single and Heavy Nylon-Coated Round Copper Magnet Wire, NEMA MW 6-1957; ASA C9.8-

Single - Paper - Covered Round Copper Magnet Wire, NEMA MW 31-1956; ASA C9.9-

Paper-Covered Rectangular and Square Copper Magnet Wire (One Paper ¾ Lap or Four Intercalated Papers), NEMA MW 33-1957; ASA C9.10-

Glass - Fiber - Covered Rectangular and Square Copper Magnet Wire, NEMA MW 42-1957; ASA C9.11-
Sponsor: National Electrical Manufacturers Association

Fittings for Rigid Steel Conduit and Electrical Metallic Tubing, Specification for, C80.4-
Sponsors: American Iron and Steel Institute; National Electrical Manufacturers Association

Residential Wiring Handbook, C91.1-
Sponsor: Industry Committee on Interior Wiring Design

In Standards Board

Schedules of Preferred Ratings for Alternating- and Direct-Current Low Voltage Air Circuit Breakers, C37.16- (Revision of C37.16-1956)
Sponsor: Electrical Standards Board

Ceramic Dielectric Capacitors, Classes 1 and 2, Recommendations for, C83.4-(Revision of EIA REC-107-A; ASA C83.4-1955)

Electrolytic Capacitors (For Use Primarily in Transmitters and Electronic Instruments), Requirements for, C83.15-(Revision of EIA TR-140; ASA C83.15-1956)

Circular Waveguides, Requirements for, EIA RS-200; ASA C83.19-
Sponsor: Electronic Industries Association

GAS-BURNING APPLIANCES

In Standards Board

Addenda (Z21.1.1b) to American Standard Approval Requirements for Domestic Gas Ranges, Volume I, Free Standing Units, Z21.1.1-1956

Addenda (Z21.1.2b) to American Standard Approval Requirements for Domestic Gas Ranges, Volume II, Built-In Domestic Cooking Units, Z21.1.2-1956

Addenda (Z21.5b) to American Standard Approval Requirements for Domestic Gas Clothes Dryers, Z21.5-1956

Addenda (Z21.6a) to American Standard Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6-1957

Installation of Domestic Gas Conversion Burners, Requirements for, Z21.8- (Revision of Z21.8-1948)

Addenda (Z21.10.1b) to American Standard Approval Requirements for Gas Water Heaters, Volume I, Z21.10.1-1956

Addenda (Z21.10.2b) to American Standard Approval Requirements for Gas Water Heaters, Volume II, Side-Arm Type Water Heaters, Z21.10.2-1956

Addenda (Z21.11b) to American Standard Approval Requirements for Gas-Fired Room Heaters, Z21.11-1956

Central Heating Gas Appliances, Approval Requirements for, Volume I, Steam and Hot Water Boilers, Z21.13.1- (Revision of Z21.13.1-1956)

Central Heating Gas Appliances, Approval Requirements for, Volume II, Gravity and Forced Air Central Furnaces, Z21.13.2- (Revision of Z21.13.2-1956)

Addenda (Z21.13.3b) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume III, Gravity and Fan Type Floor Furnaces, Z21.13.3-1956

Central Heating Gas Appliances, Approval Requirements for, Volume IV, Gravity and Fan Type Vented Recessed Heaters, Z21.13.4- (Revision of Z21.-13.4-1955)

Gas Valves, Listing Requirements for, Z21.15- (Revision of Z21.15-1954)

Addenda (Z21.16a) to American Standard Approval Requirements for Gas Unit Heaters, Z21.16-1957

Domestic Gas Conversion Burners, Listing Requirements for, Z21.17- (Revision of Z21.17-1948)

Relief and Automatic Gas Shut-Off Valve for Use on Water Heating Systems, Listing Requirements for, Z21.22- (Revision of Z21.22-1935)

Gas-Fired Duct Furnaces, Approval Requirements for, Z21.34- (Revision of Z21.34-1955)
Sponsor: American Gas Association

Reaffirmation Being Considered

Draft Hoods, Listing Requirements for, Z21.12-1937 (R1953)

Refrigerators Using Gas Fuel, Approval Requirements for, Z21.19-1941 (R1953)

Furnace Temperature Limit Controls and Fan Controls, Listing Requirements for, Z21.29-1941 (R1953)

Gum Protective Devices, Listing Requirements for, Z21.35-1945 (R1953)
Sponsor: American Gas Association

MATERIALS HANDLING

American Standards Approved

55-Gallon Tight Head Universal Drum, ICC-17E, MH2.1-1958

55-Gallon Full Open Head Universal Drum, MH2.2-1958

55-Gallon Tight Head Universal Drum, ICC-5B, MH2.3-1958

55-Gallon Tight Head Universal Drum, ICC-17C, MH2.4-1958

55-Gallon Full Open Head Universal Drum, ICC-17H,MH2.5-1958

30-Gallon Tight Head Universal Drum, ICC-17E,MH2.6-1958

16-Gallon Tight Head Universal Drum, MH2.7-1958
16-Gallon Full Open Head Lug Cover Universal Drum, MH2.8-1958
5-Gallon Tight Head Universal Drum, ICC-17E, MH2.9-1958
5-Gallon Lug Cover Universal Pail, MH2.10-1958
Sponsor: Packaging Institute

MECHANICAL

American Standards Approved

Slotted and Recessed Head Tapping Screws and Metallic Drive Screws, B18.6.4-1958 (Revision of B18.6-1947)
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

In Board of Review

Evaluating Static and Dynamic Load Ratings for Ball and Roller Bearings, Method of, B3.11-
Sponsor: Mechanical Standards Board

In Standards Board

Plain Washers, B27.2- (Revision of B27.2-1953)
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Standard Submitted

Diamond Dressing Tools, B67.1-
Sponsors: Industrial Diamond Association of America; American Society of Tool Engineers

PHOTOGRAPHY

American Standards Approved

Photographic Flash Lamps, Method for Testing, PH2.13-1958 (Revision of Z52.43-1944)
Special-Purpose Photographic Exposure Indexes for Short and for Long Exposure Times, PH2.14-1958
Diffuse Reflection Density, PH2.17-1958
Sponsor: Photographic Standards Board
Photographic Filter Sizes, Specification for, PH3.17-1958
Apertures and Related Quantities Pertaining to Photographic Lenses, Methods of Designating and Measuring, PH3.29-1958 (Revision of Z38.4.20-1948)
Dimensions for Camera Accessory Shoes, PH3.30-1958
Photographic Enlargers, Methods for Testing, PH3.31-1958 (Revision of Z38.7.6-1950)
Sponsor: Photographic Standards Board

In Board of Review

Curl of Photographic Film, Methods for Determining the, PH1.29-
Film in Rolls for Recording Instruments, Graphic Arts, Photo Typesetting, Portrait, X-ray and Related Use, Dimensions for, PH1.30-
Sponsor: Photographic Standards Board
Sensitometric Exposure of Daylight-Type Color Films, PH2.11-
Sponsor: Photographic Standards Board
Sulfuric Acid, Specifications for Photographic Grade, PH4.101- (Revision of Z38.8.101-1949)
Citric Acid, Monohydrate, Specifications for Photographic Grade, PH4.102- (Revision of Z38.8.102-1949)
Boric Acid, Crystalline, Specifications for Photographic Grade, PH4.103- (Revision of Z38.8.103-1949)
Hydrochloric Acid, Specifications for Photographic Grade, PH4.104- (Revision of Z38.8.104-1949)
Catechol, Specifications for Photographic Grade, PH4.131- (Revision of Z38.8.-131-1948)
Formaldehyde, Specifications for Photographic Grade, 37-Percent Solution, PH4.152- (Revision of Z38.8.152-1949)
Sodium Sulfate, Anhydrous, Specifications for Photographic Grade, PH4.-175- (Revision of Z38.8.175-1949)
Sodium Bisulfite, Anhydrous, Specifications for Photographic Grade, PH4.-276- (Revision of Z38.8.276-1949)
Sponsor: Photographic Standards Board
8mm Motion-Picture Projection Reels, PH22.23- (Revision of Z22.23-1941)
16mm Motion-Picture Film, 1R 2994, Dimensions for, PH22.109-
16mm Motion-Picture Film, 2R-2944, Dimensions for, PH22.110-
Sponsor: Society of Motion Picture and Television Engineers

In Standards Board

Photographic Roll Paper, Dimensions for, PH1.11- (Revision of PH1.11-1953)
Brittleness of Photographic Film, Method for Determining the, PH1.31-
Sponsor: Photographic Standards Board

PIPE AND FITTINGS

American Standard Approved

Steel Butt-Welding Fittings, B16.9-1958 (Revision of B16.9-1951)
Sponsors: American Society of Mechanical Engineers; Mechanical Contractors Association of America; Manufacturers Standardization Society of the Valve and Fittings Industry

In Standards Board

Butt-Welding Ends, B16.25- (Revision of B16.25-1955)
Sponsors: Mechanical Contractors Association of America; Manufacturers Standardization Society of the Valve and Fittings Industry; American Society of Mechanical Engineers

SAFETY

Withdrawal Being Considered

Leather Aprons, L18.1-1944
Leather Cape Sleeves and Bibs, L18.2-1944
Leather Leggings (Knee Length), L18.3-1944
Leather Coats, L18.4-1944
Leather Overalls, L18.5-1944
Leather Sleeves, L18.6-1944
Welders Leather Gauntlet Gloves, L18.7-1944
Protective Leather Gloves, Steel Stapled, L18.8-1944
Asbestos Gloves, L18.9-1944
Asbestos Gloves, Leather Reinforced, L18.10-1944
Asbestos Mittens, L18.11-1944
Asbestos Mittens, Leather Reinforced, L18.12-1944
Asbestos Aprons (Bib Type), L18.14-1944
Asbestos Cape Sleeves and Bibs, L18.15-1944
Asbestos Leggings (Knee and Hip Length), L18.16-1944
Asbestos Coats, L18.17-1944
Leather One-Finger Mittens, L18.18-1945
Leather Mittens, L18.19-1945
Asbestos One-Finger Mittens, L18.20-1945
Flame-Resistant Fabric Aprons (Bib Type), L18.21-1945
Flame-Resistant Fabric Leggings (Knee and Hip Length), L18.22-1945
Flame-Resistant Fabric Coats, L18.23-1945
Flame-Resistant Fabric Pants, L18.24-1945
Flame-Resistant Fabric Coveralls (Jumper Suits), L18.25-1945
Flame-Resistant Fabric Spats, L18.26-1945
Leather Spats, L18.27-1945
Asbestos Spats, L18.28-1945
Chemical-Resistant Gloves, L18.29-1945
Sponsor: Industrial Safety Equipment Association

PUBLISHED STANDARDS NOW AVAILABLE . . .

If your company is a member of the American Standards Association, you are entitled to receive membership service copies of these newly published American Standards. Find out who your ASA contact is in your company. Order your American Standards through him. He will make sure your company receives the membership service to which it is entitled.

CHEMICAL INDUSTRY

Chemical Analysis of Alkaline Detergents, Methods of Sampling, ASTM D 501-57; ASA K60.21-1958 (Revision of ASTM D 501-55; ASA K60.21-1956) $0.30
Sponsor: American Society for Testing Materials

DRAWINGS, SYMBOLS, AND ABBREVIATIONS

American Drafting Standards Manual, Section 7, Gears, Splines and Serrations, Y14.7-1958 (Partial revision of Z14.1-1946) $1.50
Sponsors: American Society of Engineering Education; American Society of Mechanical Engineers

ELECTRIC AND ELECTRONIC

Aluminum Wire for Communication Cable, Tentative Specifications for, ASTM B 314-57T; ASA C7.40-1958 $0.30
Sponsor: American Society for Testing Materials
Natural Block Mica and Mica Films Suitable for Use in Fixed Mica-Dielectric Capacitors, Tentative Specifications for, ASTM D 748-54T; ASA C59.26-1957 (Revision of ASTM D 748-52T; ASA C59.26-1954) $0.30
Sponsor: American Society for Testing Materials
Designation of Miniature Lamps, Method for the, C78.390-1958 $0.35
Sponsor: Electrical Standards Board

Published Standards (cont'd)

MATERIALS HANDLING

Conveyor Terms and Definitions, MH4.1-1958 (Revision of B75.1-1956) $1.50
Sponsor: Conveyor Equipment Manufacturers Association

MECHANICAL

Microscope Objective Thread, B1.11-1958 $1.00
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools, B5.28-1958 (Revision of B5.28-1952) $1.00
Sponsors: American Society of Tool Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers; American Society of Mechanical Engineers

Carbon-Silicon Steel Plates of Intermediate Tensile Ranges for Fusion-Welded Boilers and Other Pressure Vessels, Tentative Specifications for, ASTM A 201-57T; ASME SA-201; ASA G31.1-1958 (Revision of ASTM A 201-54T; ASA G31.1-1956) $0.30
Sponsor: American Society for Testing Materials

High Tensile Strength Carbon-Silicon Steel Plates for Boilers and Other Pressure Vessels, Tentative Specifications for, ASTM A 212-57T; ASME SA-212; ASA G35.1-1958 (Revision of ASTM A 212-54T; ASA G35.1-1956)
Sponsor: American Society for Testing Materials

Mild- to Medium-Strength Carbon-Steel Castings for General Application, Specifications for, ASTM A 27-57; AASHO M103; ASA G50.1-1958 (Revision of ASTM A 27-55; ASA G50.1-1956) $0.30
Sponsor: American Society for Testing Materials

PHOTOGRAPHY

Photographic Grade Acetic Acid, Glacial, Specification for, PH4.100-1958 (Revision of Z38.8.100-1949) $0.25

Photographic Grade Acetic Acid, 28-Percent Solution, Specification for, PH4.106-1958 (Revision of Z38.8.106-1949) $0.25

Photographic Grade Sodium Acetate, Anhydrous, Specification for, PH4.176-1958 (Revision of Z38.8.176-1949) $0.25

Photographic Grade Copper Sulphate, Specification for, PH4.180-1958 (Revision of Z38.8.180-1949) $0.25

Photographic Grade Potassium Dichromate, Specification for, PH4.300-1958 (Revision of Z38.8.177-1949) $0.25

Photographic Grade Potassium Permanganate, Specification for, PH4.301-1958 (Revision of Z38.8.178-1949) $0.25

Photographic Grade Potassium Ferricyanide, Specifications for, PH4.302-1958 (Revision of Z38.8.179-1949) $0.25
Sponsor: Photographic Standards Board

PIPE AND FITTINGS

Brass or Bronze Screwed Fittings, 125 lb, B16.15-1958 (Revision of B16.15-1947) $1.50
Sponsors: American Society of Mechanical Engineers; Mechanical Contractors Association of America; Manufacturers Standardization Society of the Valve and Fittings Industry

Electric - Resistance - Welded Steel Heat-Exchanger and Condenser Tubes, ASTM A 214-56T; ASME SA-214; ASA B36.32-1958 (Revision of ASTM A 214-55T; ASA B36.32-1956) $0.30
Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

SAFETY

Safe Design and Use of Industrial Beta-Ray Sources, Z54.2-1958 $0.20
Sponsor: National Bureau of Standards

TEXTILES

Tentative Methods of Testing of Sewing Threads, ASTM D 204-56; ASA L14.-14-1957 (Revision of ASTM D 204-42; ASA L14.14-1949) $0.30

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

Office Standards, X2—

The committee's annual report to ASA shows that the sectional committee is undertaking a number of new activities and has completed others. A task group has been formed within X2 with the Systems and Procedures Association to develop an American Standard on office procedures charting. Also, because of the expanding work on dictating machines it was necessary to organize a standing subcommittee on dictating machines where previousiy a task group was sufficient. A proposed American Standard Definition for Office Type Dictating Equipment, X2.5.20, has just been completed and is ready for consideration by the sectional committee. Several proposed standards on dictating machines are in draft stages.

The Society of Reproduction Engineers, a new member of the X2 committee, has been assigned the task of developing a proposed standard for offset plates, with a view to organizing eventually a subcommittee to work on all reproduction standards.

Liaison has been arranged with the Sectional Committee on Photographic Reproduction of Documents, PH5, as the work of this committee often relates to office operations, particularly in the area of microfilming of business forms.

The Records Management Association has undertaken an assignment to study the question of reaffirmation or revision of American Standard X2.4.1-1951, Size Designation for Index Cards and Record-Keeping Cards.

A number of draft standards on file folders are ready to be submitted to Sectional Committee X2 for its consideration.

Common Names for Pest Control Chemicals, K62—

Sponsor: U. S. Department of Agriculture

The committee is recommending a revision of the American Standard Procedures for the Acceptance of an American Standard Common Names for a Pest Control Chemical, K62.1-1956. As recommended, the change makes a more positive prohibition against similarity to existing common names or trade names that might cause confusion.

At the same time it relaxes to some degree its expressed preference for common names having no chemical significance. This has been done as a move to eliminate a conflict with ISO work where the majority of countries appear to favor names having such chemical significance.

Up to the present time, the American Standards Association has approved and published nine common names. These are: Monuron, K62.2-1957; Diuron, K62.3-1957; Erbon, K62.6-1957; Fenuron, K62.7-1958; Neburon, K62.8-1957; Dalapon, K62.9-1957; Silvex, K62.10-1957; Ovex, K62.11-1957; Ethion, K62.-12-1958.

The following common names

were recently submitted to ASA for approval: Diphacinone, K62.13- ; Dicapthon, K62.14- ; and Phosphamidon, K62.15- . Several others are presently under consideration by Committee K62.

These are coined names that are applied to the 100-percent pure pest control chemical. They are generally proposed by the manufacturers of the basic chemical. Such chemicals are used in insecticides, fungicides, rodenticides, herbicides, and nematicides as well as in defoliators and plant regulators.

Cooling Towers, B76—
Sponsors: The American Society of Mechanical Engineers; Air Conditioning and Refrigeration Institute; Cooling Tower Institute

Newly appointed officers of Committee B76 are S. F. Des Marais, E. I. du Pont de Nemours & Company, Inc, chairman, and J. H. Bateman,

S. F. Des Marais

Marley Company, vice-chairman.

Eight subcommittees have been named to carry out the committee's work. These, with their chairmen, are:

Performance Testing Procedures, Subcommittee 1—E. C. Smith, Hudson Engineering Corporation

Materials, Subcommittee 2—W. R. Thomas, Carbide & Carbon Chemicals Company

Mechanical Components, Subcommittee 3—D. D. Herrman, Hartzell Propeller Fan Company

Safety Requirements, Subcommittee 4—Henry G. Strong, Air Conditioning and Refrigeration Institute

Water Treatment, Subcommittee 5—J. L. Powell, Union Carbide Nuclear Company

Fire Protection, Subcommittee 6—H. C. Cranick, Factory Insurance Association

Performance Analysis, Subcommittee 7—Donald M. Vestal, Texas Agriculture and Mining College

Dimensions, Subcommittee 8—John R. Buss, Monsanto Chemical Company.

John H. Bateman

At the request of one of the sponsors the subcommittees have been asked to make a formal report to the sectional committee on the feasibility of standardization in their assigned areas.

The new chairman of the committee, Mr Des Marais, acted for the Chemical Industry Advisory Board in development of the standardization program which is now being undertaken by Sectional Committee B76. Since 1950 he has been supervisor of consultants in the Air Conditioning, Refrigeration, Cooling Tower, and Environmental Engineering fields in du Pont's engineering department. His experience at du Pont has included various supervisory positions in the Military Explosives Program, and power consultant in the company's engineering department. He has been with du Pont since 1942. Mr Des Marais is a member of the American Society of Heating and Air Conditioning Engineers.

Mr Bateman has been with the Marley Company since 1940, serving in various capacities in engineering and sales, and now as technical assistant to the general sales manager. He is a member of the American Society of Civil Engineers, and a member and formerly chairman of the engineering committee, Cooling Tower Section, Air Conditioning and Refrigeration Institute. He is chairman of the technical subcommittee on engineering standards of the Cooling Tower Institute.

Sizes of Shipping Containers, MH5—
Sponsors: The American Society of Mechanical Engineers; American Material Handling Society

All groups and organizations interested in the development of standards for shipping container sizes are invited by the American Standards Association to participate in a new sectional committee under ASA procedures. Organization of the committee has just been approved by the Miscellaneous Standards Board.

The committee's first meeting will be held July 30 to lay out the plans for handling the technical work.

The scope of the committee will be the standardization of sizes of pallet containers, cargo containers, and van containers suitable for interchangeable use on different types of transports — rail, truck, plane, or ship.

This project resulted from a general conference, called by ASA in December 1957, and the subsequent resolution of 38 representatives of national organizations and government departments who attended.

"It is expected that standard sizes of interchangeable shipping containers will reduce transportation costs of practically every shipper in the country," explained Cyril Ainsworth, deputy managing director of the American Standards Association. "This project should be of interest to every company and organization that makes, distributes, carries, and receives goods," he said.

Urging that work on standard shipping container sizes be undertaken, a spokesman for the truck trailer industry said at the general conference: "In the past year several corporations have made an intensive study of the confusing transportation problems. Some of the information uncovered was startling and indicates that additional work will be required. The Transportation Association of America estimates that distribution and handling charges amount to some $50 to $55 billion a year and now represent the second largest cost item in finished goods. Of this, the Department of Commerce estimates that $27 billion are for inter-city transportation. Obviously, the remainder is for pick-up and delivery, cartage and handling. Much of the $23 billion plus is an extravagance which the economy can no longer tolerate. For example, the Senate Agriculture Subcommittee discovered that $10.8 billion

were spent for fresh perishables in 1956, and of this sum $7.8 billion were for distribution. This amounts to approximately 70 percent of the retail selling costs."

Pictorial Markings of Handling Instructions for Non-Dangerous Goods, MH6—

Sponsor: Society of Industrial Packaging and Materials Handling Engineers

Organizations interested in the development of standard pictures indicating handling instructions for packages are invited to participate in such work on a new standards committee about to be formed under the auspices of the American Standards Association.

This new project, MH6, and a new sectional committee has been authorized by the Miscellaneous Standards Board. It will work under the following scope:

"To prepare coordinated recommendations for the pictorial markings applied to packages of non-dangerous goods to indicate special handling instructions."

Any organization substantially concerned with the scope of the project can be represented on the ASA sectional committee.

A similar project is planned by the International Organization for Standardization, on which United States interests will be represented through the American Standards Association.

One of the objectives of the ASA Sectional Committee MH6 will be the development of an American viewpoint to be presented at the international standards meeting. It is hoped that international standard pictorial markings eventually will be developed that will ensure proper handling of goods shipped to any part of the world regardless of the language spoken by those handling the packages.

Small Tools and Machine Tool Elements, B5—

Sponsors: The American Society of Mechanical Engineers; National Machine Tool Builders Association; Society of Automotive Engineers; Metal Cutting Tool Institute; American Society of Tool Engineers

A revision of the American Standard on Twist Drills, Straight Shank and Taper Shank, B5.12-1950, was completed by Technical Committee 7 on Twist Drills, and has been submitted by the sectional committee to the sponsors. H. J. Moffatt, chairman, reports that combined drills and countersinks not previously covered in the standard have been added in the proposed revision, as well as screw machine length drills, and 22 selected sizes of millimeter drills. The committee has also made some changes in nomenclature for clarification.

Considerable discussion came up in the final stages of the revision in regard to decimal marking of drills, a controversial and time-consuming issue, Mr Moffatt reports. It was agreed by the committee to go ahead with the new edition so that American industry could have a usable standard representing current industry practice during the time needed to resolve this problem.

The fact that good suggestions were submitted with letter ballot approval when the ballots were returned indicates that more publicity should be given when a committee starts to work on a revision, Mr Moffatt points out.

Decimal marking of drills and possible elimination of some sizes of drills that are the same or nearly the same is the next project of this committee.

Mr Moffatt hopes to get industry-wide thinking on these problems before the committee progresses too far with its work. Therefore, he and his committee will welcome all suggestions and proposals. Interested industry or technical groups are invited to write H. J. Moffatt, chairman, TC-7 Twist Drills, care of Caterpillar Tractor Company, Joliet, Illinois.

Photographic Sensitometry, PH2—

Sponsor: Photographic Standards Board
Report by M. G. Anderson, chairman

In recent months, the photographic press has shown a lively interest in the status of the American Standard Method for Determining Photographic Speed and Exposure Index, PH2.5-1954. Many articles have suggested that a revision of this American Standard is in order. This is a healthy condition since it indicates wide interest in and use of this standard. All American Standards are under constant surveillance by the technical committees concerned looking toward their revision and improvement.

In fact the PH2.5-1954 standard was placed under study for revision in 1956 by a special group. Upon recommendation of this group, in May 1957, a subcommittee of PH2 was organized and instructed to get on with the job of revision. ASA Sectional Committee PH2 on Photographic Sensitometry is a 30-man group representing all major interests in the field.

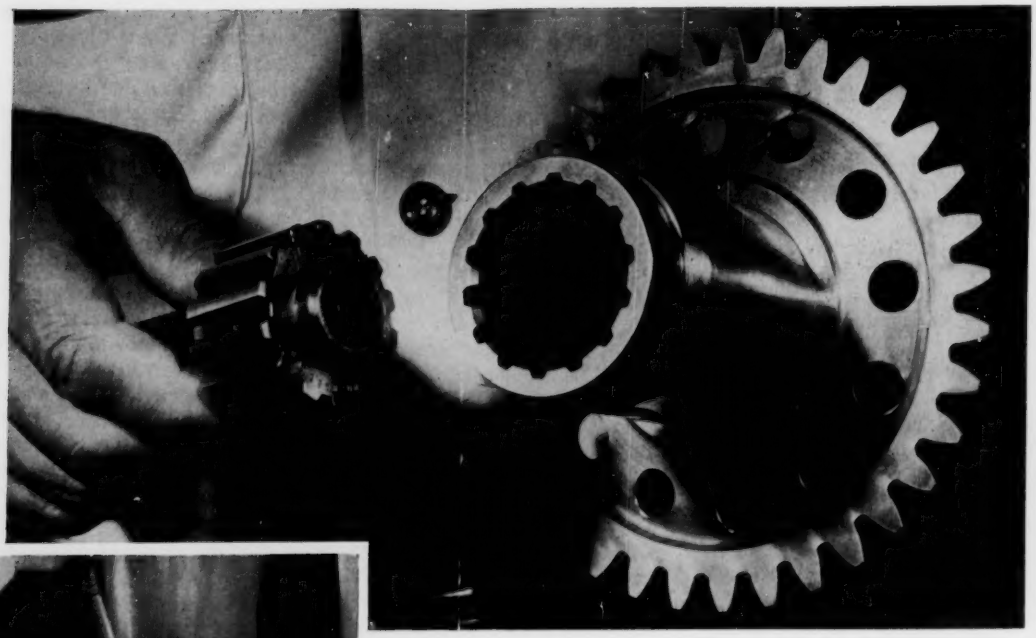
As is usual with all ASA working committees, the membership of this subcommittee represents both producer and consumer interests. Experts in photography representing the manufacturers of sensitive materials, cameras, light meters, flash lamps, and other photographic equipment, as well as representatives from the Optical Society of America, Society of Photographic Scientists and Engineers, Photographic Society of America, the National Bureau of Standards, and various other professional and consumer organizations responded to the call to serve on the newly formed subcommittee.

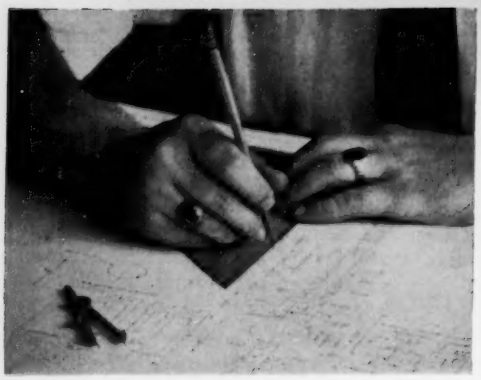
In the opinion of this subcommittee, certain revisions appear to be desirable, but it is also believed that the standard in its present form is still serving the interests of the vast majority of photographers. In some special instances such as the use of the recently introduced high speed films, the cumulative errors of exposure meters, aperture markings and shutter perfomance have led to negatives which are too dense to yield prints of optimum quality. It is recognized that the safety factor incorporated in the ASA Exposure Index contributes to this condition. A change in the safety factor alone, however, will not guarantee that optimum results are obtained unless good photographic practices are followed. Many of the difficulties experienced in applying the standard arise from the use of special exposing and processing techniques.

The subcommittee is now actively engaged in determining whether a modification of the safety factor or some other feature of the standard will best serve the photographic public.

Ninth National Conference on Standards

Hotel Roosevelt, New York
November 18, 19, 20, 1958





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